Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 9:44 AM
To: Rombough, Kyrik; Gustafson, Brian
Cc: Duvall, Ron
Subject: FW: Attention Hyperion air permit

Hyperion comment.

Kim
-----Original Message-----
From: James Ross [mailto:sdlittleredhen@yahoo.com]
Sent: Friday, November 14, 2008 9:41 AM
To: DENR INTERNET INFORMATION
Subject: Attention Hyperion air permit

Concerning air quality in Southeastern South Dakota

I would like to include my voice in requesting an environmental impact study if Hyperion were to build in Union county.

When the DENR holds its puplic hearings concerning the air permit for Hyperion, I would request that they be held in this area so the citizens here could participate.

Other issues that concern me are:
* increased motor and rail traffic and how those emissions will impact air quality
* monitoring of greenhouse gasses
* flaring not being included in emissions of the plant.

Thank you for your attention to my concerns

Barbara Ross
31729 Henke Rd
Union County
Elk Point, SD 57025

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 2:20 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Attention: Hyperion Air Permit

Hyperion comment.

Kim

-----Original Message-----
From: Heck [mailto:heck@speednet.com]
Sent: Friday, November 14, 2008 1:17 PM
To: DENR INTERNET INFORMATION
Subject: Attention: Hyperion Air Permit

To South Dakota Department of Natural Resources:

I feel that it is of utmost importance that an Environmental Impact Statement be required before an air permit is granted. The DENR's assurance that they have the means to monitor and review Hyperion through a myriad of environmental permitting and regulatory processes is simply not adequate enough. The South Dakota Environmental Policy Act calls for an EIS on large scale projects. Wouldn't the nation's sixth largest oil refinery qualify for this?

With a project this massive it is hard to believe that the DENR would be able to anticipate all the substantial impacts on the quality and quantity of our air, land, water, and biological resources. How can we find ways and means to address negative impacts if we don't even know what they are? By failing to do an environmental impact statement the cost will be greater if we wait to address the adverse impacts in years to come. Potential problems need to be addressed now in the early planning and design stage.

It is also important that the DENR understand the perception that failing to require an independent third party review gives the residents of this great state. Many people are already skeptical and apprehensive about Hyperion due in part to company's lack of direct communication with the public on key concerns. When the DENR chooses to rely on their own internal means to over see and evaluate the short and long time implications of this project it creates an environment of public distrust.

I feel that the draft permit submitted by Hyperion is incomplete and fails to address a multitude of questions. Some of the questions I would like addressed from the SD DENR and Hyperion are:

*What are the potential impacts on our wildlife, wildlife habitat and endangered species?

*How will plant species and area crop and farm ground be affected?

*Why are the upstarts and shutdowns of the proposed refinery not included in the air permit?

*How will truck and rail traffic contribute to the overall emissions?

*What will be the odor emissions and impact on neighbors to the proposed refinery?

*Has the USDA's preservation program been contacted concerning loss of prime farm ground?

*How is the DENR collecting base line data to ensure that the above mentioned natural resources are being protected?

*What will be the social impact on people of the area and impact on the local rural character?

*What affect will noise have on area citizen's quality of life?

I also find it disturbing the 100's of form letters that Hyperion has solicited and submitted from residents of Iowa and South Dakota. It is questionable whether a majority of those citizens who signed their names have any knowledge of Hyperion as a company or the specific concerns that need or should be addressed in an air permit. Despite Hyperion's efforts this is not a popularity contest and I hope that the DENR will give more weight to personally written letters from concerned citizens. I respectfully ask that the SD DENR deny this immature draft permit submitted by Hyperion. I also ask that you would consider holding any upcoming hearings concerning the air permit closer to the proposed refinery site location so that those closest to the project can attend.

Thank you for hearing my concerns regarding the air permit.

Sincerely,

Christy Heckathorn
47345 319th Street
Elk Point, SD 57025

*

Rombough, Kyrik

From: Smith, Kim
Sent: Monday, November 17, 2008 7:20 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Attn Hyperion Air Permit

fyi
-----Original Message-----
From: Spader, Dean J [mailto:Dean.Spader@usd.edu]
Sent: Sunday, November 16, 2008 9:42 PM
To: DENR INTERNET INFORMATION
Subject: Attn Hyperion Air Permit

Dear Sirs/Madams: Please take note that "improved data" of the effects of CO2 levels given by the pre-eminent scientist in the field, Dr. James Hansen and ten scientists. Attach this article as Addendum A to my Novermber 11 Comments letter. DENR should not continue the "greatest danger of continued ignorance and denial" about the dangers of excessive CO2 emissions by Hyperion's proposed refinery.

Sincerely, Dean Spader, Attorney at Law

Carbon Dioxide Levels Already In Danger Zone, Revised Theory Shows

ScienceDaily (Nov. 9, 2008) — If climate disasters are to be averted, atmospheric carbon dioxide (CO_2) must be reduced below the levels that already exist today, according to a study published in Open Atmospheric Science Journal by a group of 10 scientists from the United States, the United Kingdom and France.

See also:
Earth & Climate

- Climate
- Global Warming
- Atmosphere
- Acid Rain
- Environmental Issues
- Energy and the Environment

Reference

- Fossil fuel
- Geologic temperature record
- Consensus of scientists regarding global warming
- Climate

The authors, who include two Yale scientists, assert that to maintain a planet similar to that on which civilization developed, an optimum CO_2 level would be less than 350 ppm — a dramatic change from most previous studies, which suggested a danger level for CO_2 is likely to be 450 ppm or higher. Atmospheric CO_2 is currently 385 parts per million (ppm) and is increasing by about 2 ppm each year from the burning of fossil fuels (coal, oil, and gas) and from the burning of forests.

"This work and other recent publications suggest that we have reached CO_2 levels that compromise the stability of the polar ice sheets," said author Mark Pagani, Yale professor of geology and geophysics. "How fast ice sheets and sea level will respond are still poorly understood, but given the potential size of the disaster, I think it's best not to learn this lesson firsthand."

The statement is based on improved data on the Earth's climate history and ongoing observations of change, especially in the polar regions. The authors use evidence of how the Earth responded to past changes of CO_2 along with more recent patterns of climate changes to show that atmospheric CO_2 has already entered a danger zone.

According to the study, coal is the largest source of atmospheric CO_2 and the one that would be most practical to eliminate. It is still not practical to capture CO_2 emerging from vehicle tailpipes, the way it can be with coal-burning facilities, note the scientists. Coal, on the other hand, has larger reserves, and the authors conclude that "the only realistic way to sharply curtail CO_2 emissions is phase out coal use except where CO_2 is captured and sequestered."

In their model, with coal emissions phased out between 2010 and 2030, atmospheric CO_2 would peak at 400-425 ppm and then slowly decline. The authors maintain that the peak CO_2 level reached would depend on the accuracy of oil and gas reserve estimates and whether the most difficult to extract oil and gas is left in the ground.

The authors suggest that reforestation of degraded land and improved agricultural practices that retain soil carbon could lower atmospheric CO_2 by as much as 50 ppm. They also dismiss the notion of "geo-engineering" solutions, noting that the price of artificially removing 50 ppm of CO_2 from the air would be about $20 trillion.

While they note the task of moving toward an era beyond fossil fuels is Herculean, the authors conclude that it is feasible when compared with the efforts that went into World War II and that "the greatest danger is continued ignorance and denial, which could make tragic consequences unavoidable."

"There is a bright side to this conclusion" said lead author James Hansen of Columbia University, "Following a path that leads to a lower CO_2 amount, we can alleviate a number of problems that had begun to seem inevitable, such as increased storm intensities, expanded desertification, loss of coral reefs, and loss of mountain glaciers that supply fresh water to hundreds of millions of people."

In addition to Hansen and Pagani, authors of the paper are Robert Berner from Yale University; Makiko Sato and Pushker Kharecha from the NASA/Goddard Institute for Space Studies and Columbia University Earth Institute; David Beerling from the University of Sheffield, UK; Valerie Masson-Delmotte from CEA-CNRS-Universite de Versaille, France Maureen Raymo from Boston University; Dana Royer from Wesleyan University and James C. Zachos from the University of California at Santa Cruz.

Citation: Open Atmospheric Science Journal, Volume 2, 217-231 (2008)

Adapted from materials provided by Yale University.

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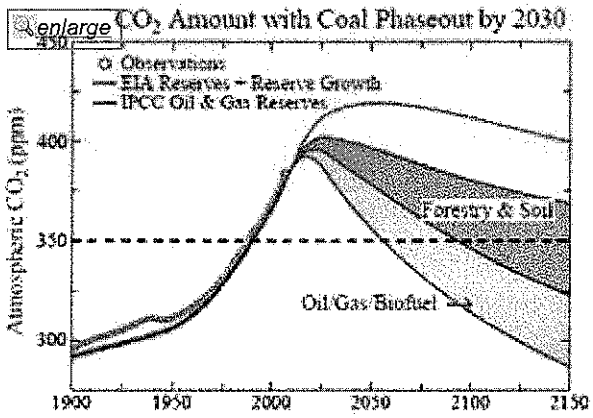
MLA
Yale University (2008, November 9). Carbon Dioxide Levels Already In Danger Zone, Revised Theory Shows. *ScienceDaily*. Retrieved November 16, 2008, from http://www.sciencedaily.com /releases/2008/11/081108155834.htm



Atmospheric carbon dioxide if coal emissions are phased out linearly between 2010 and 2030, calculated using a version of the Bern carbon cycle model. (Credit: Hansen, et al/Open Atmospheric Science Journal)

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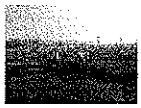

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Rombough, Kyrik

From: Smith, Kim
Sent: Monday, November 17, 2008 7:18 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Draft Air Permit, Hyperion Energy Center, Union County, South Dakota

H comment.
-----Original Message-----
From: DAVE WILSON [mailto:davewonline@gmail.com]
Sent: Sunday, November 16, 2008 7:10 PM
To: DENR INTERNET INFORMATION
Subject: Fwd: Draft Air Permit, Hyperion Energy Center, Union County, South Dakota

Gentlemen,
My original email was inadvertently sent to the wrong domain name. Please accept the following with my apologies for the error.
Dave Wilson

---------- Forwarded message ----------
From: **DAVE WILSON** <davewonline@gmail.com>
Date: Fri, Nov 14, 2008 at 3:12 PM
Subject: Draft Air Permit, Hyperion Energy Center, Union County, South Dakota

Gentlemen,

Attached and following you will find my comments and requests concerning the above referenced permit and its comment period. I am looking forward to your comments and as Governor Rounds eloquently expressed regarding this project, "We are committed to protecting those who cannot protect themselves."

Thank you for your attention and consideration of my comments.

Best Regards,
Dave Wilson

--
Dave Wilson
davewonline@gmail.com
206-909-3762

DENR

Joe Foss Building

523 East Capitol

Pierre, South Dakota 57501-3182

November 13, 2008

Re: Proposed Draft Air Permit

Hyperion Energy Center

Union County, South Dakota

Gentlemen:

I have reviewed your Draft Permit and found that in spite of being a degreed engineer from SD School of Mines and Technology, it is very complex and difficult to understand for many of the persons impacted. I request that you publish a simplified list of permitted contaminants with anticipated yearly totals requested with your estimates of proposed limits for each.

I have the following comments and request your response:

1) The roads and streets within the project should **not** remain unpaved for up to one year with the emission control systems listed.

2) The monitoring systems listed are not the best available as required by the EPA.

3) Refinery flares should be included in the recovery and monitoring systems especially for "upsets".

4) All pipelines and transportation systems (rail, etc.) should be included in your draft permit.

5) The required reporting needs to be sooner than the time limits noted and an independent third party be required to verify such.

6) The final Air Permit should be delayed until DENR receives an Environmental Impact Statement from an independent third party at Hyperion's expense to more fully understand the full environmental and socio-economic impact of the proposed project.

7) Several public meetings and/or hearings should be held in the area of the proposed site to allow the public to better educate the public on what measures DENR is taking to

protect the public interest. The 30 comment period should be extended to accommodate this process.

I am expectantly awaiting South Dakota DENR's response to and action up my comments.

Sincerely,

/S/ David A. Wilson

David A.Wilson

--
Dave Wilson
davewonline@gmail.com
206-909-3762

DENR
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

November 13, 2008

Re: Proposed Draft Air Permit
Hyperion Energy Center
Union County, South Dakota

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I have reviewed your Draft Permit and found that in spite of being a degreed engineer from SD School of Mines and Technology, it is very complex and difficult to understand for many of the persons impacted. I request that you publish a simplified list of permitted contaminants with anticipated yearly totals requested with your estimates of proposed limits for each.

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4) All pipelines and transportation systems (rail, etc.) should be included in your draft permit.
5) The required reporting needs to be sooner than the time limits noted and an independent third party be required to verify such.
6) The final Air Permit should be delayed until DENR receives an Environmental Impact Statement from an independent third party at Hyperion's expense to more fully understand the full environmental and socio-economic impact of the proposed project.
7) Several public meetings and/or hearings should be held in the area of the proposed site to allow the public to better educate the public on what measures DENR is taking to protect the public interest. The 30 comment period should be extended to accommodate this process.

I am expectantly awaiting South Dakota DENR's response to and action up my comments.

Sincerely,
/S/ David A. Wilson
David A.Wilson

Rombough, Kyrik

From: Smith, Kim
Sent: Monday, November 17, 2008 9:30 AM
To: Rombough, Kyrik
Subject: FW: hyperion air permit

-----Original Message-----
From: EDWIN H NYDAM [mailto:elnydam@q.com]
Sent: Friday, November 14, 2008 4:10 PM
To: DENR INTERNET INFORMATION
Subject: hyperion air permit

I have tried to find something of substance in the air permit application for the hyperion refinery. While there are several pages of listed requirements, I found no references as to the research and documentation to legitimize these listed pollutant levels as safe. As a proper scientific document, I find the permit as I had first seen it lacking rigor.
I have tried to access the permit again and found the process of downloading it cumbersome if not impossible as in the case of acccessing the letters of others commenting on the permit. I had hoped to achieve an understanding of others concern with the permit by reading their letters. Apparently these letters are denied to those outside the DENR.
I have also heard that the DENR is claiming expertise in the monitoring of oil refineries by permiting the ethanol industry. I would like to remind you that an oil refinery will have far pollutants and a far more concentrating effect of pollutants than any ethanol plant.
I hope you are willing to acknowledge this letter

Edwin Nydam
127 N Dakota St
Vermillion SD
elnydam@q.com

Rombough, Kyrik

From: Ajayi.Christopher@epamail.epa.gov
Sent: Friday, November 14, 2008 4:03 PM
To: Gustafson, Brian
Cc: Rombough, Kyrik; Daly.Carl@epamail.epa.gov
Subject: HEC PSD Draft Permit Comments - November 14, 2008

HECPSDComments1
1-14-08.pdf (1 ...

Please find attached our comments on the draft PSD Permit for the Hyperion Energy Center proposed facility. Hard copies will follow.

(See attached file: HECPSDComments11-14-08.pdf)

Christopher Ajayi
Air & Radiation Program (8P-AR)
U.S. EPA Region 8
1595 Wynkoop Street,
Denver, CO 80202-1129
phone: (303) 312 6320
fax: (303) 312 6064

****
Our Office has moved, please note our new address.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8P-AR

NOV 14 2008

Brian Gustafson, PE
Administrator
Air Quality Program
Department of Environment and Natural Resources
Division of Environmental Services
523 East Capitol, Joe Foss Building
Pierre, South Dakota 57501

Re: Comments on Draft Prevention of Significant Deterioration (PSD) Permit No. 28.0701 – PSD to Construct Hyperion Energy Center

Dear Mr. Gustafson:

Thank you for submitting copies of Hyperion Energy Center's public notice, statement of basis, and draft Prevention of Significant Deterioration (PSD) permit issued by the South Dakota Department of Environment and Natural Resources (DENR) to Hyperion Refining, LLC for EPA's review. The permit action authorizes Hyperion Refining LLC to construct the Hyperion Energy Center (HEC), near Elk Point, Union County, South Dakota.

The proposed HEC will consist of a 400,000 barrel-per-day crude oil petroleum refinery and an Integrated Gasification Combined Cycle (IGCC) power plant with a gross power output of 532 MW. The power plant will supply the refinery with hydrogen, electric power, and steam for its operation. EPA received the draft PSD permit package on September 16, 2008. The initial public notice period for comments on the draft permit ended on October 13, 2008.

EPA requested an extension of the public notice period to provide comments in a letter dated September 25, 2008, sent to DENR. DENR granted the request by agreeing to extend the public notice period for both EPA and the public to provide comments until November 14, 2008. DENR also agreed to public notice the extension of the comment period during the week of September 29, 2008, in the same newspapers that the original notice was published and placed the notice of the extension on its website at http://www.state.sd.us/denr/hyperion.htm

Our primary comments on the draft PSD permit include Best Available Control Technology (BACT) permit requirements and the enforceability of provisions that minimize emissions. In addition, a response letter to Hyperion from EPA Region 8's Office of Enforcement, Compliance and Environmental Justice that addresses issues related to New Source Performance Standards and Maximum Achievable Control Technology Standards is forthcoming, and you will be copied on this response letter.

The Region looks forward to continuing to work with DENR as it revises the draft permit and Statement of Basis in response to these comments and those from the public, particularly on developing BACT limitations and ensuring enforceability of the permit's terms and conditions.

If you have any questions or concerns, please contact me at (303) 312-6434, or your staff can contact Christopher Ajayi at (303) 312-6320. Again, thank you for the opportunity to comment.

Sincerely,

For

Callie A. Videtich, Director
Air & Radiation Program

Enclosure

cc: Kyrik Rhombough (SD DENR)

EPA Region 8 Air Program's Comments

Submitted to

the South Dakota Department of Environment and Natural Resources

on

the Draft PSD Permit for the Hyperion Energy Center

November 14, 2008

Table of Contents

Hyperion Energy Center Draft PSD Permit Comments
November 2008

I. Background

Hyperion Energy Center (HEC) is a proposed 400,000 barrels per day (BPD) crude oil refinery and Integrated Gasification Combined Cycle (IGCC) power plant with nominal gross power output of 532 MW. The draft PSD permit issued by SD-DENR would authorize Hyperion Refining LLC to construct the HEC near Elk Point, Union County, South Dakota.

II. Permit Format

EPA notes that the current permit format is somewhat confusing to review and understand. It is an important component of the public participation process that DENR proposes a permit that lends itself to public participation, technical content of such document notwithstanding. DENR should revise the format by evaluating each of the major emitting units separately for all pollutants it emits as did the application. Such a format will facilitate review of the permit by EPA, the citizens and interested parties and will enhance compliance demonstration.

III. Project Emissions Summary and Crude Slate

Table 1.4-1 of the application and Table 7-1 ("NSR Regulated Air Pollutants Significant Emission Comparison") of the Statement of Basis (SOB) list a summary of the proposed facility's potential to emit both regulated and unregulated air pollutants (the table includes the controlled emissions and the significant rate for the pollutants). The application describes the table as summary of proposed facility's PTE while the SOB labeled it "Controlled emissions" of NSR regulated air pollutants. Table 7-1 also indicated that the applicant did not submit uncontrolled emissions. The uncontrolled emission information should be included in the DENR's analysis. Additionally, where did the annual emissions rates titled "controlled emissions" by the SOB and "proposed facility's PTE" by the application come from? These references and supporting information for these emission estimates need to be documented and provided to EPA and the public for review.

The SOB and the application should be revised to provide a detailed analysis of the source(s) of these emission estimates, including necessary supporting documentation for both potential hourly and annual emission rates for all the emission units and other sources of emissions (i.e., cooling towers, equipment leaks, internal combustion engines, and all other emission sources covered by the proposed permit).

It has been noted that this refinery is proposing to use crude derived from Canadian tar sands. While EPA recognizes that a refinery crude slate can vary greatly depending on operations and product demand, in its review, EPA could not find any

discussion of the design crude characteristics. EPA requests that this be better defined and discussed with other necessary permit assumptions, so that a more complete understanding of refinery crude constituents and the ultimate refinery emissions in the application, statement of basis, and permit can be developed. EPA requests that, at a minimum, this discussion include sulfur content, hydrogen/carbon (H/C) ratio, and metals in the refinery's representative crude.

IV. Petroleum Refinery Process Heaters

A. Oxides of Nitrogen (NOx) BACT

Table 4.2-1 of the application lists process heaters with low-NOx burners and SCR to achieve a BACT emission limit of 0.006 lb/MMBtu heat input (HHV), based on a rolling three-hour average. Table 4.2-2 of the application also lists process heaters with low-NOx burners only to achieve a BACT limit of 0.025 lb/MMBtu, based on a rolling three-hour average. Table 7-55 (pp87) of the SOB also proposes BACT limits of 0.006 lb/MMBtu for Units #1 through 20 using low-NOx burners and SCR and BACT limits of 0.025 lb/MMBtu for Units 21-30 using only Ultra low-NOx burners.

Both the draft permit (page 40) and the SOB (page 88) state "compliance with the emission limit is based on a 3-hour rolling average, excluding periods of startup, shutdown, and malfunction, and based on a 365-day rolling average, including periods of startup, shutdown and malfunction using a continuous emission monitoring system that meets procedures specified in permit condition 11.1."

EPA notes that DENR's decision to accept the same numerical value (0.006 lb/MMBtu and 0.025 lb/MMBtu) for BACT limits based on a 365-day rolling average for periods that include startup, shutdown, and malfunction presents compliance demonstration problems. It is generally accepted that emissions during startup, shutdown, and malfunction are usually higher than during normal operation. Therefore, it is difficult to ascertain emissions associated with these high periods of emissions if compliance is based on a 365-day rolling average. EPA also notes that none of the previous determinations used by DENR as the basis for its proposed determinations have required compliance based on a 365-day rolling average. The DENR's proposed BACT limits based on a 365-day rolling average for periods that include startup, shutdown, and malfunction are the least stringent we have seen, and thus are unacceptable to EPA. For example, the Arizona Clean Fuels Yuma Refinery PSD permit issued on September 18, 2006, does not include such an averaging time.

We recommend two different options for solving this problem. First, DENR could require that the BACT limits proposed by HEC, and accepted as BACT by DENR, apply at all times including periods of normal operation, startup, shutdown, and malfunction with a 3-hour rolling average. Second, DENR could establish separate BACT limits for startup and shutdown. DENR would need to define startup and shutdown in the permit using objective criteria and require appropriate monitoring and

recordkeeping of when such periods start and end to demonstrate compliance with a separate BACT limit during those periods.

Large and Small Process Heaters' BACT limits

Hyperion proposed, and DENR agrees with basing the BACT emission limits for NOx on the size of the unit based on what was considered economically feasible for the different process heaters in the Hyperion's application (see page 87 of the SOB, table 7-55). DENR agrees with Hyperion's proposal of a BACT limit of 0.006 lb/MMBtu for large process heaters (Units #s 1-20) by utilizing both low-NOx burners and SCR as control system. DENR also agrees that a BACT limit of 0.025 lb/MMBtu for small process heaters (Units #21-30) by utilizing ultra low-NOx burners as control equipment.

As discussed in the SOB (page 88), DENR's review of the South Coast Air Quality Management District's permit to Ceneco Refining Company for its Santa Fe Springs Refinery issued on November 17, 2000, notes a BACT limit of 0.006 lb/MMBtu was required for a heater with HHV of 50 MMBtu/hr utilizing SCR as emission control. Nonetheless, DENR accepts Hyperion's proposal of a BACT limit of 0.025 lb/MMBTU for heaters (Units 21-30) with HHV of 66.9 MMBtu/hr. utilizing only ultra low-NOx burners. Hyperion argues that the incremental cost effectiveness of adding SCR systems to these ten process heaters is more than $30,000 per ton of NOx emission reduction and thus does not represent BACT for these units. They also contend that requiring SCR for the small heaters would result in adverse environmental impact and relatively insignificant air quality benefits.

The discussion in the application as well as DENR's discussion in the SOB does not support the above conclusion. For example, our review of summary cost data provided in Appendix D to this application, referenced as the basis for the $30,000 incremental cost effectiveness of adding SCR, did not contain any referenced or supporting analysis for arriving at this figure. As discussed in Section XIV below, the costs must be documented. Hyperion and DENR need to provide detailed analysis that establishes the incremental cost of selecting SCR in addition to low-NOx burners that would effectively reduce NOx emissions from 0.025 lb/MMBtu to 0.006 lb/MMBtu. The DENR's analysis should also discuss the potential adverse environmental impact of selecting SCR alluded to in its discussion. EPA notes that there is precedence in this case for using SCR for NOx emissions control for process heaters with HHV as small as 50 MMBtu/hr as discussed above.

B. Oxides of Sulfur (SOx) BACT

Hyperion found many options for controlling refinery fuel gas (RFG) sulfur level in emissions from the process heaters and these include fuel gas cleanup by chemical absorption (methyl diethanolamine (MDEA)), fuel gas cleanup by physical absorption (Rectisol and Selexol), and fuel gas desulfurization. Hyperion then concluded that the two highest-ranked control options (Rectisol and Selexol) would cause significant adverse energy and economic impacts that would outweigh the beneficial environmental

impacts. Hyperion also concludes that capital and operating costs are greatly increased by stating that the cost effectiveness of fuel gas cleanup by physical absorption is more than $35,000 per ton of SO2 removal for Selexol process and nearly $70,000 per ton of SO2 removal for the Rectisol wash process as shown in Appendix D of the application.

EPA finds the economic impact analysis for refinery fuel gas desulfurization, as well as the other emission control equipment in Appendix D, inadequate. Hyperion needs to present all the appropriate corresponding costs, in particular the documentation for the costs presented for MDEA process (with an emission limit of 35 ppmv refinery sulfur content) to allow valid comparison with Selexol (with an emission limit of 10 ppmv) and Rectisol (with an emission limit of 1.0 ppmv) physical absorption methods. In order to evaluate whether the Selexol process is cost prohibitive, as Hyperion proposes, EPA notes that it is necessary to review the incremental cost effectiveness of Selexol over MDEA since the emissions reduction with Selexol is on the order of more than three times that of MDEA. EPA requests that the State provide this information to us. Although DENR agrees with Hyperion that fuel gas cleanup by physical absorption (Selexol and Rectisol) was not cost effective, we are not making any comments on the proposed BACT determination until we have had the opportunity to review the cost effectiveness and incremental cost analysis for the three sulfur reduction methods.

In the meantime, based on our research EPA agrees with DENR that sulfur dioxide of no greater than 35 parts per million by volume refinery gas determined as sulfur appears to represent the range of BACT emission limits through the use of the MDEA chemical absorption method. However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed limit. Furthermore, we do not agree with DENR's decision to allow for compliance to be demonstrated on a 24-hour rolling average, which excludes startup, shutdown, and malfunction; and also provides for a 365-day rolling average, that includes startups, shutdowns and malfunction. As we have discussed previously in this comment letter (see NOx BACT section above), we recommend one of two options: DENR needs to either require that the BACT limit applies at all times, including periods of startup, shutdown, and malfunction; or DENR needs to establish a separate BACT limit for explicitly defined startup, shutdown periods. DENR must also require monitoring and recordkeeping to demonstrate compliance during these explicit time periods.

C. Carbon Monoxide (CO) BACT

Based our research, EPA agrees with DENR that a carbon monoxide (CO) emission limit of 0.007 lb/MMBtu on a dry basis through good combustion practices represents BACT for all refinery process heaters (Units #1-30) appears to be within the range of what constitutes BACT. We base our conclusion on the relatively recent permit for the Arizona Clean Fuels Yuma Refinery issued on September 18, 2006, where the emission limit for the process heaters is 0.018 to 0.04 pounds per million Btus and California's Bay Area Air Quality Management District's Regulation 9 Rule 10 – Nitrogen Oxides and Carbon Monoxides from Boilers, Steam Generators and Process

Heaters in Petroleum Refineries where the emission limit is 0.3 pound per million Btu. However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed limit.

Additionally, in reviewing DENR's discussion in the SOB and the basis for the limit, we found neither any justification for the 24-hour rolling average that excludes startup, shutdown, and malfunction, nor did we find any reference to a 365-day rolling average for periods including startup, shutdown, and malfunction for demonstrating compliance with this limit as agreed to by DENR. In fact, averaging times in the Arizona Clean Fuels Yuma Refinery range from hourly to a three hour average, which is an example of a permitted refinery meeting much more stringent limits. Furthermore, DENR needs to require that the BACT limit apply at all times, including periods of startup, shutdown, and malfunction or require a separate BACT limit for appropriately defined startup and shutdown periods and require monitoring and recordkeeping to demonstrate compliance with these periods. DENR also needs to appropriately reduce the averaging times for compliance demonstration through the use of the CO continuous emission monitoring system (CEMS).

D. Volatile Organic Compounds (VOCs) BACT

Based on our research, EPA agrees with DENR that volatile organic compounds (VOCs) emission limit of 0.0015 lb/MMBtu on a 3-hr average falls within the range of what we would expect to see for BACT for all refinery process heaters (Units #1-30). However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed limit. Our RBLC database review indicates that the emission rate for process heaters at the Exxon Corporation's Exxon Bay Refinery permit issued on May 5, 1999, varies between 0.0013 to 0.006 pounds per million Btus. However, Permit condition 10.10 (page 62) only requires one set of initial VOCs performance stack tests for these units within three years after initial startup of the petroleum refinery, and does not require ongoing compliance demonstrations after these initial performance tests. The permit should require ongoing BACT compliance demonstration for these emission units.

Additionally, DENR needs to include a permit condition that requires Hyperion to correlate the BACT CO emission limits that are established for these units, and monitored through CO CEMS, with the BACT VOC emissions limits that are established during the initial VOC performance tests. The correlated CO and VOC results should be used to demonstrate compliance with the BACT VOC emission limits achieved through good combustion practices.

E. Particulate Matter (PM) BACT

Hyperion proposes and DENR accepts that an emission limit of 0.0075 lb/MMBtu for PM10 emissions including both filterable and condensable from refinery fuel gas-fired process heaters (units #1-30) is representative of a BACT limit through good

combustion practices. Thus, DENR proposes to require that Hyperion demonstrate compliance with this limit by a 3-hour average based on a stack performance test. Condition 10.7 (page 59) of the permit requires Hyperion to conduct stack tests for all the refinery process heaters within three years of the refinery startup. DENR also proposes that the BACT emission limit for PM10 is not applicable during startup, shutdown, or malfunction. Finally, DENR states that the PM10 emission limit during startup, shutdown, or malfunction is discussed elsewhere in the statement of basis (pages 55-56). We have several issues with the above proposed determination and proposed testing requirements.

First, DENR proposes a one time initial performance test to demonstrate compliance with the BACT limit for filterable PM10. However, no filterable PM10 BACT limit is specified (see pages 23 to 26 and page 61, footnote 1); the proposed BACT limit is for both filterable and condensable emissions. DENR also discusses in the statement of basis its review of the Texas Commission on Environmental Quality's technical review of the PSD permit for Fina Oil & Chemical Company's Port Arthur Refinery permit issued in 1998, which indicated that Method 202 is the promulgated method for demonstrating compliance with PM10 condensable limits. Yet, DENR's proposed permit only proposes testing of PM10 filterable emissions. DENR needs to require a compliance demonstration for both filterable and condensable PM10 using EPA Methods 201A and 202 respectively.

Second, we strongly recommend DENR require the use of a PM CEMS to demonstrate on-going compliance with the BACT limit proposed. DENR's proposal to conduct a one time initial performance test within three years of startup of the refinery does not constitute, or demonstrate, on-going compliance with the BACT limit proposed. EPA also notes that the PM CEMS will solve the problem of demonstrating compliance during startup, shutdown, or malfunction.

Finally, our review of DENR's BACT analysis for startup, shutdown, and malfunction (page 137 of the SOB) raises additional questions. For example, DENR states that periods of startup, shutdown, and malfunction are not considered representative conditions to conduct a performance test for compliance demonstration. Therefore, DENR believes it is not prudent to establish a numerical BACT limit where compliance cannot be verified. Yet, DENR concluded its analysis by stating that Hyperion would likely meet the BACT emission limit in pounds per hour because startup and shutdown periods occur at low operational loads. Furthermore, we reject the notion that BACT limits should be limited in application based on the performance test specified; an exception based on this concept is inconsistent with EPA's longstanding interpretation that BACT applies at all times. Reference: January 28, 1993 memo from John Rasnic, EPA, entitled "Automatic or Blanket Exemptions for Excess Emissions During Startup, and Shutdowns Under PSD.

Thus, consistent with our earlier comments regarding BACT for other pollutants, BACT must apply at all times, including periods of startup, shutdown, and malfunction. In the alternative, if it is not feasible to meet BACT during startup and shutdown, DENR

may establish a separate BACT limit during these periods. In the latter approach, the permit must adequately define startup and shutdown based on objective criteria and require Hyperion to appropriately monitor and record instances of startup and shutdown per the permit definitions. In either approach, the permit must specify means to determine compliance with applicable BACT limits during all periods, including startup, shutdown, and malfunction. DENR needs to apply this same approach for all BACT limits for which the ability to determine compliance during startup, shutdown, or malfunction may be an issue.

V. Refinery and IGCC Flare BACT for SO_2, CO, NOx, PM, PM_{10}

A. Refinery & IGCC Flare Design

EPA generally agrees with both Hyperion and DENR that good combustion practices and a flare minimization plan should be part of BACT for SO2, CO, NOx, PM, and PM10 for the refinery flares and IGCC flare for this source. However, we are not satisfied with certain aspects of the BACT requirements, as specified in this section and sections V.B, C, and D below. While Chapter 12.0 of the permit (p.70) includes refinery flare design, operation, emissions' minimization plan, recordkeeping and reporting, and root cause analysis requirements, the permit does not include emission limits and standards that could be used to demonstrate compliance. For example, Condition 12.4(4) (p.72) requires the source to perform a Method 9 visible emissions observation no more than 15 minutes after the start of the flare event and for the duration of the event, but does not specify what constitutes a violation. DENR needs to require that all refinery and IGCC flares be designed for and operated with no visible emissions, and require Method 22 for compliance demonstration and not Method 9. DENR should also require a minimum threshold for higher (gross) heating value of the gas flow to each flare in addition to determining and recording such value as required by Condition 12.4(6). Such minimum higher heating value should be established to correspond to minimum emissions. Also, DENR needs to require Hyperion to design the flares with a maximum exit velocity that ensures minimum emissions during flaring. Such flow velocity should be monitored and recorded to demonstrate compliance.

Finally, DENR should consider and evaluate as potential BACT for refinery and IGCC flare emissions the imposition of annual limits, which would include malfunction periods. While EPA doesn't generally consider annual limits acceptable as stand-alone BACT limits, they may make sense for flares in combination with other measures. Such limits are being imposed at ConocoPhillips' Wood River refinery in Illinois, and the South Coast Air Quality Management District has imposed annual SO2 emissions caps on flares, violation of which are subject to penalties.

B. Refinery & IGCC Flare Work Standards

The proposed language in 12.1 defines malfunction and then says, "A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment

breakdown, or any other cause within the control of the owner or operator of the source is not a malfunction." It then goes on to say that flaring during a malfunction shall be completed per a flare minimization plan.

We are not convinced that this approach to malfunction flaring constitutes BACT. Also, we are concerned about potential emissions during malfunction flaring and potential impacts to the NAAQS and increments.

EPA acknowledges that malfunctions occur and that flaring is necessary to deal with emissions during malfunctions. However, consistent with the requirement that BACT apply at all times, it is important that malfunctions be avoided if at all possible, and minimized if they do occur. Accordingly, the permit should include provisions to strongly incentivize proper operation and maintenance of the facility, consistent with the goal of minimizing malfunction flaring. The proposed language in 12.1 regarding malfunctions is not sufficiently robust to ensure this goal is achieved. It is not sufficiently detailed and it does not specify that the owner/operator has the burden of showing that the event was truly a malfunction. An approach that would address our concerns would be to include in the permit the criteria from EPA's 1999 excess emissions policy for establishing that an event was a malfunction, and require the source to demonstrate that it met the criteria.

These criteria are:

1. The flaring emissions were caused by a sudden, unavoidable breakdown of technology, beyond the control of the owner or operator;

2. The flaring emissions (a) did not stem from any activity or event that could have been foreseen and avoided, or planned for, and (b) could not have been avoided by better operation and maintenance practices;

3. To the maximum extent practicable the air pollution control equipment or processes and other facility processes were maintained and operated in a manner consistent with good practice for minimizing emissions;

4. Repairs were made in an expeditious fashion when the operator knew or should have known that a malfunction was occurring. Off-shift labor and overtime must have been utilized, to the extent practicable, to ensure that such repairs were made as expeditiously as practicable;

5. The amount and duration of the flaring emissions were minimized to the maximum extent practicable during periods of such emissions;

6. All possible steps were taken to minimize the impact of the flaring emissions on ambient air quality;

7. All emission monitoring systems were kept in operation if at all possible;

8. The owner or operator's actions in response to the flaring emissions were documented by properly signed, contemporaneous operating logs, or other relevant evidence;

9. The flaring emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

10. The owner or operator properly and promptly notified the appropriate regulatory authority.

Regarding protection of NAAQS and increments, if some limit on emissions is needed to protect the NAAQS or increments (or put another way, if uncontrolled flare emissions could threaten NAAQS or increments), then those limits should be met at all times and any flaring above those values should be considered a violation. EPA's 1999 excess emissions policy allows establishment of an affirmative defense to penalties (but not injunctive relief) for such a violation, based on meeting the criteria above. The DENR could write such an affirmative defense into the permit.

C. The Refinery and IGCC Flare Minimization Plan

The flare minimization plan is not part of the permit. Given that this is part of BACT, it should be included in the permit and not be developed later. In *In re Rockgen Energy Center*, EPA's Environmental Appeals Board (EAB) held that a PSD permit was deficient because a startup/shutdown emissions minimization plan was not included in the permit. See 8 E.A.D. 536, at 551 - 555, 1999 The plan should be enforceable and not be changeable without public process. Id. We note that condition 12.3 of the proposed permit says the minimization plan will be revised once a year.

D. Root Cause Analysis

We have several concerns related to the root cause analysis. First, the permit should require a root cause analysis for the IGCC flare. Second, the permit should specify that a recurrence of the same root cause constitutes a violation of the permit. This is consistent with the refinery settlements and should be considered part of BACT. Third, in 12.5(4)(p. 72), the text should be changed to read, "The steps taken to limit the duration of the flaring event ***and*** the quantity of emissions associated with the event." Fourth, consistent with the refinery settlements, a root cause analysis should also be required if flare SO2 emissions exceed 500 pounds in a 24-hour period.

VI. Catalyst Regeneration Vents

A. NOx BACT

Based on our experience, EPA agrees with DENR and Hyperion that work practice standards and 0.1 lb/hr. (units 31 and 32) and 0.02 lb/hr. (unit 33), for Platformer Catalyst Regenerators and Oleflex Catalyst Regenerator respectively fall within the range of what we would anticipate to see for the BACT emission limits. In light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed limit. We do not agree with the compliance demonstration requirement proposed by DENR (footnote 2, page 40 of the permit). Chapter 10 of the permit concerning performance tests, outlines a number of permit Conditions that DENR secretary may or may not require to be carried out to demonstrate compliance with the emission limit based on an average of three test runs (Condition 10.1, page 58). This provides the Secretary with inappropriate discretion. Although, DENR establishes Condition 10.1 in accordance with Administrative Rule of South Dakota (ARSD) 74:36:11:02, EPA believes ARSD 74:36:09:02, as referenced to 40 C.F.R § 52.21 and the demonstration of compliance with BACT limit is more appropriate in this case. Thus, DENR needs to re-cite the basis for its authority for this permit Condition and require Hyperion to conduct the initial permit test to demonstrate compliance with BACT limit by removing the Secretary's discretion.

DENR needs to require Hyperion to comply with all the applicable requirements outlined in NESHAP 40 CFR 63 Subpart UUU. Since Units 31, 32 and 33 are not equipped with CEMS, DENR also needs to outline the specific provisions of this subpart that require Hyperion to demonstrate compliance during periods of startup, shutdown, and malfunction according to a plan and ensure on-going compliance during periods of normal operation.

B. Oxides of Sulfur BACT

Hyperion proposes that the SO2 BACT emission limits for the catalyst regenerators at HEC be established as 0.2 lb/hr from each of the Platformer catalyst regenerators (units 31 and 32) and 0.03 lb/hr. from the Oleflex regenerator (unit 33) based on adherence to manufacture's recommended operating and work practices. DENR agrees with these BACT limits as proposed by Hyperion, but lists a caustic scrubber as a control device for these units (see Table 1-1, page 3 of the permit). Hyperion considered add-on air pollution control such as wet caustic scrubber in its BACT analysis for SO2 control for the catalyst regenerators and concluded it was infeasible due to its adverse economic impact. (See Hyperion's application –section 4.4.2.2, page 64). DENR needs to revise table 1-1 of the permit and include the appropriate control device or practice for catalyst regenerators.

The issue of compliance demonstration by a 3-hour average based on a stack performance test proposed by DENR has been discussed above (see NOx BACT). We recommend DENR include applicable requirements and/or specific work plan provisions to demonstrate compliance during startup, shutdown, and malfunction and to ensure on-going compliance demonstration during normal operations as in the case of NOx emissions. Finally, because Hyperion proposed SO2 emissions BACT limits based on design maximum exhaust gas flow rates and an SO2 concentration of 15 ppm in the

regenerator exhaust gases, Hyperion should provide the number that represents maximum exhaust gas flow rate. DENR should incorporate both the concentration and the maximum flow rate from regenerators' vents into the permit and both should have permit conditions that require monitoring and recordkeeping to demonstrate compliance with BACT limits.

C. CO and PM BACT Limits

Based on our experience, EPA agrees with the proposed BACT emission limits of 0.5 lb/hr. for CO and 0.01 lb/hr. for PM from each of the Platformer catalyst regenerators (units 31 & 32) and 0.1 lb/hr. for CO and 0.002 lb/hr. for PM from the Oleflex regenerator (unit 33) through adherence to manufacturer's recommended work and operating practices fall within the range of the limits we would expect to see for these units. In light of the insufficient cost documentation, incomplete incremental cost analysis, and lack of permit condition specificity, EPA is unable to make a determination and provide final comments on the proposed BACT limit. As discussed above (see NOx & SOx BACT in section VI), DENR needs to incorporate into the permit specific compliance requirements including monitoring and recordkeeping requirements to demonstrate compliance with these BACT limits (i.e., establishment of, and requirement to comply with, the maximum design exhaust gas flow rates from the vents).

VII. Coker Drum Overhead Steam Vents

This comment covers Units #34a, 34b, 34c, 34d, 35a, 35b, 35c, 35d, the coke drum overhead steam vents

Section 4 of the Hyperion Energy Center PSD permit establishes particulate and VOC limits for the coke drum overhead steam vents (Units #34a, 34b, 34c, 34d, 35a, 35b, 35c, 35d). These limits are based upon work practice standards required by NSPS Subpart Ja, found in Section 6.4 of the PSD permit. However, it does not appear that there was any analysis of SO2 emissions from these process vents. As stated in the background information document for NSPS Subpart Ja these emission points can also be significant sources of SO2 emissions. As such, these emission points should have gone through BACT review for SO2. DENR must develop an SO2 BACT analysis, and the required supporting documentation, for these steam vents. EPA requests that the DENR submit the additional BACT analysis to us for our review and comment.

In addition, in establishing BACT limits for VOC and particulate emissions from these emission units, DENR cites the May 14, 2007 federal register notice for NSPS Subpart Ja as stating that it is technically infeasible to control coker drum steam vents to a level lower than that established in NSPS Subpart Ja. That notice is no longer relevant because since the publication of the federal register notice, EPA has become aware of a PSD permit (issued to the Marathon Petroleum Company by the State of Michigan on June 20, 2008) requiring a design requirement of 2.0 psig rather than the NSPS requirement of 5.0 psig. Therefore, this demonstrates the feasibility of a lower emission limit.

EPA recommends that DENR review this new permit data that demonstrates that controls greater than those required by NSPS Subpart Ja are technically feasible and determine if lower levels are appropriate for the Hyperion Energy Center. EPA requests that the DENR submit the additional BACT analysis to us for our review and comment.

VIII. Cooling Tower

PM BACT Limits

Based on EPA's review, it appears that the proposed PM BACT emission limit is based on the assumption that 0.0005 percent of the circulating water flow rate is emitted as PM emissions (see table 7-23 in the statement of basis). This limit would be achieved through the use of a fan air cooler with high efficiency drift eliminators on the wet cooling tower and falls within the range of limits we would expect to see for BACT. However, in light of the insufficient cost documentation, incomplete incremental cost analysis, and lack of permit condition specificity (as discussed below) EPA is unable to make a determination and provide final comments on the proposed BACT limit. Hyperion noted in its application (page 68) that emission testing is not feasible for wet cooling towers due to the exhaust characteristics. Therefore, the BACT determination is expressed as an equipment specification rather than an emission limit. This statement contradicts the PM BACT emission limit proposed by Hyperion and accepted by DENR. Unfortunately, DENR did not discuss, or seek to dispute, this assertion in the statement of basis. In fact, Condition 5.3, which is the only permit Condition that addresses the installation, operation, and maintenance of the tower, only requires the operator to meet a PM limit of 0.0005 percent of the water flow rate.

Hyperion should provide the design parameters of the cooling tower sized for the HEC refinery, including but not limited to, the maximum water flow rate that will ensure that the PM BACT limit of 0.0005 percent is met. DENR should incorporate such parameter(s) into the permit as a mechanism for ensuring compliance with the PM BACT emission limit. To demonstrate compliance with such permit Condition, DENR needs to require monitoring and recordkeeping of these parameters and clearly define what constitutes a violation.

IX. Refinery Sulfur Recovery Plant

A. SO_2 BACT

The HEC refinery design includes six complete sulfur recovery trains (units 42a, 42b, 42c, 42d, 42e, 42f), sized so that four trains can meet the facility's sulfur recovery requirements while two trains are offline. Each train is has a thermal oxidizer that represents the emission point for the unit. DENR has determined that 0.056 pound per

long ton represents BACT for each of these units to ensure that each thermal oxidizer is operated properly. Based on our experience, EPA agrees with that the proposed limit falls within the range we would expect. However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed BACT limit. Additionally, we do not agree with the 114.2 lb/hr. limit for the sulfur recovery plant (i.e., the assumption that all the thermal oxidizers are in operation at any given time) as outlined in permit Condition 4.2, footnote 8 on page 35 of the permit. We note that the 114.2 lb/hr. limit for the sulfur recovery unit would not ensure that each thermal oxidizer is operating properly if three or two thermal oxidizers are in operation at any given time. Furthermore, requiring compliance based on pounds per long ton would ensure consistency regardless of mode of operation under either the maximum coke design or natural gas design cases.

DENR needs to require compliance with the 0.056 pound per long ton for each oxidizer based on the continuous emission monitoring system (CEMS) data. Again, EPA disagrees with DENR's decision to use a 365-day rolling average for periods that include startup, shutdown, and malfunction even when using CEMS data. DENR must require the BACT limits to apply at all times, including periods of startup and shutdown and malfunction, or DENR needs to establish a separate BACT limit for explicitly defined startup and shutdown periods. DENR must also require monitoring and recordkeeping to demonstrate compliance during these explicit time periods.

B. H_2S, NOx, CO and VOCs BACT Limits

Based on EPA's experience, we agree that DENR's recommendation that the H_2S BACT limit should be 0.00015 pound per long ton falls within the range we would anticipate for the BACT limit. However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed BACT limit. Also, we disagree with the proposed limit of 0.3 pound per hour for the same reasons discussed above (see section VIII(a) – SO2 BACT limit discussion).

EPA also agrees, based on our experience, that the NOx, CO and VOCs BACT determinations for the sulfur recovery plant fall within the range of what we would anticipate seeing for the BACT limits. However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed limit. EPA disagrees with the use of a 365-day rolling average for periods that include startup, shutdown, and malfunctions for NOx as stated in the statement of basis on page 91. Consistent with our earlier comments regarding BACT for other units and pollutants, BACT must apply at all times. If it is not feasible to meet BACT during startup and shutdown, DENR can establish a separate BACT limit during these periods, along with appropriate definitions of startup and shutdown and monitoring and recordkeeping requirements regarding these periods.

C. PM BACT Limits

Based on the discussion on the SO2 BACT limit for the sulfur recovery plant (see section VIII(a) above), EPA recommends that DENR adopt a 0.0055 pounds per long ton sulfur loaded for each of the thermal oxidizers (filterable and condensable) as a PM BACT limit to ensure that each thermal oxidizer is operated properly. We note that the 11.2 lb/hr. limit for the sulfur recovery unit would not ensure that each thermal oxidizer is operating properly if three or two thermal oxidizers are in operation at any given time. As discussed above, this limit will also ensure consistency in compliance demonstrations under either the maximum coke design or the natural gas design scenario.

X. Storage Tanks

A. VOCs, NOx, PM and SOx BACT Limit

DENR proposes two operating scenarios as BACT for all storage tanks storing organic volatile compounds (units #71 through #174) as follows: Routing all emissions to one of the two thermal oxidizers (units 175 and 176), or routing all storage tanks with floating roofs storing a liquid with a maximum true vapor pressure greater than or equal to 0.3 pounds per square inch to one of the two thermal oxidizers. The DENR proposed that all other floating roof tanks storing VOCs shall be limited to storing liquids with a maximum true vapor pressure less than 0.3 pounds per square inch. Condition 5.11 (Tank farm operational restriction) incorporates both scenarios into the permit to allow Hyperion operational flexibility. We disagree with this approach. EPA believes DENR can establish BACT based on the maximum degree of reduction achievable for this pollutant with due consideration to cost and still afford Hyperion its operational flexibility. Such an approach will firmly establish threshold emissions that will be considered BACT and will make compliance demonstration more readily achievable. However, Hyperion may achieve better than the threshold emissions if operational flexibility dictates.

DENR needs to revise Condition 5.11 to include additional design and operational restrictions to ensure tank farm thermal oxidizers (units 175 and 176) comply with PM, SO2, NOx, VOCs, and CO BACT limits beyond the initial performance tests required in chapter 10 of the permit. Such requirements should include, but are not limited to, minimum destruction efficiency, maximum exit flow rate, minimum combustion chamber temperature, minimum residence time and specification of the combustion fuel to be combusted in the thermal oxidizers.

XI. Wastewater Treatment Plant

A. VOCs BACT Limit

Based on our experience with refineries, EPA agrees with DENR that the BACT limit for VOCs of 20 ppm by weight VOCs as carbon or 98% destruction efficiency,

whichever is less stringent, through the use of a thermal oxidizer while firing refinery fuel gas or natural gas as control on the oil/water separator and dissolved air flotation (DAF) units (page 110 of statement of basis), falls within the range of what we would anticipate to see for BACT emission limits. However, in light of the insufficient cost documentation and incomplete incremental cost analysis, EPA is unable to make a determination and provide final comments on the proposed BACT limit. Furthermore, DENR needs to revise table 1-1 (Description of permitted units, operation and process) to reflect the appropriate control for the wastewater treatment plant. Based on our judgment, the control should be a thermal oxidizer with the appropriate operating design rate. The permit currently lists a catalytic oxidizer and selective catalytic reduction with a heat input rate 1.0 MMBtu/hr rate, which is what Hyperion proposed in its application and DENR disagreed with in the Statement of Basis.

Condition 15.4 – Oil/water Separator and Dissolved Air Flotation (DAF) units – requires the owner or operator to meet the closed vent system and thermal oxidizer design standards in 40 CFR §61.341 and the 98% control efficiency or 20 ppm by weight of VOCs as carbon in permit Condition 4.4 for the wastewater treatment plant thermal oxidizer. Since DENR did not propose CEMS for monitoring VOC emissions from the wastewater treatment plant as it did for SO2 and NOx, Condition 15.4 must be revised to require the wastewater plant to comply with all the applicable requirements of Condition 14.9. Condition 15.4 must be revised to include periodic monitoring of closed vent systems and control devices in order to demonstrate ongoing compliance with the proposed BACT emission limits.

B. NOx BACT Limit

DENR agrees with Hyperion's proposed NOx BACT limit of 5.0 lbs per hour from the catalytic oxidizer. In step 3 of the BACT analysis (page 87-Hyperion Application), Hyperion states that the most effective strategy for the wastewater collection system involves the use of a VOC control strategy that does not involve incineration to control VOC emissions. Thus, Hyperion proposed a catalytic oxidizer to control VOCs emissions from wastewater plant and SCR to control NOx emissions from the catalytic oxidizer with a BACT limit of 5.0 lbs per hour. However, the DENR's proposed control for VOCs for the wastewater plant is not a catalytic oxidizer as proposed by Hyperion, but rather a thermal oxidizer (see Condition 15.4). The proposed SO2 BACT limit of 98% destruction efficiency or 20 ppm by weight VOCs as carbon is based on the use of thermal oxidizer (see both table 11.1 and 11.2 – pp 66-68).

Therefore, EPA strongly recommends that the NOx BACT limit for the wastewater treatment plant should be based on a thermal oxidizer. The NOx BACT limit should be expressed as lb/MMBtu and the hourly emission rate should be based on the thermal oxidizer design capacity.

XII. BACT Analysis for Startup, Shutdown, and Malfunction

DENR suggests an alternative method will be used to demonstrate compliance during periods of startup, shutdown, and malfunction for units that use only performance tests to demonstrate compliance (see page 138 of SOB), and Condition 4.8 (page 50 of the permit) requires an alternative plan. We are concerned that DENR may intend condition 4.8 to exempt the source from compliance with the numerical BACT limits during periods of startup, shutdown, and malfunction. DENR's reasoning, expressed in the SOB, is that it "does not believe it is prudent to establish a numerical BACT limit where compliance cannot be verified." While we think it's a good thing for DENR to require an SSM plan in addition to the numerical BACT limits,[1] we have a significant problem with the notion that the numerical BACT limits would not apply during these periods just because performance tests are not run during these periods. Among other things, there may be other means to calculate emissions during these periods or surrogate measurements that could be employed. Also, monitoring and testing techniques may be developed in the future.

Consistent with our earlier comments regarding BACT for the various emission units and pollutants, BACT must apply at all times. If it is not feasible to meet BACT during startup and shutdown, DENR can establish a separate BACT limit during these periods. (This is not true for malfunctions, which should be handled through enforcement discretion or affirmative defense provisions.) As noted elsewhere, if DENR chooses to establish separate BACT limits, the permit must objectively define startup and shutdown and require Hyperion to appropriately monitor and record instances of startup and shutdown per the permit definitions.

Regardless of the approach, the permit should specify means to determine compliance with applicable BACT limits during all periods, including startup, shutdown, and malfunction. To the extent CEMS are not used and performance tests wouldn't apply during startup, shutdown, and malfunction periods, DENR should consider requiring other techniques to calculate or estimate emissions during these periods, or to ensure compliance.

XIII. Fugitive Emissions BACT

EPA disagrees with DENR's decision of proposing only a "work practice standard" as BACT for fugitive emissions. Although, Condition 5.4 (page 51) requires all haul roads and parking lots within the Hyperion Energy Center's property boundaries at this location be paved, EPA believes that all primary and secondary haul roads within and leading to the facility should be paved to protect National Ambient Air Quality Standards. Based on EPA's experience, there is significant ongoing traffic going to and from refineries.

EPA notes DENR's discussion in the Statement of Basis (see page 153), that "Hyperion modeled the roads at the site as if they were paved, that specific units would

[1] If the startup, shutdown, malfunction plan is part of BACT, it should become part of the permit and be subject to public notice and comment. See our comments regarding the flare minimization plan, above.

operate limited hours per year and did not model those units that would be used as redundant operations." DENR's SOB further indicated that "[t]he PSD permit will specify that the roads must be paved, the equipment is limited to a number of hours per year, and that only a specified number of system may be operated at any given time." While the Statement of Basis identifies certain modeling assumptions used by Hyperion and indicates that those assumptions will be PSD permit conditions, there are neither operational restrictions on any of the equipment nor are there any limitations on the number of systems that may be operated at any given time. These, as well as any additional assumptions used to develop the modeling analyses, must be included as permit provisions.

XIV. Cost Estimates must be Documented

The BACT analysis should include a compilation of all equipment and its associated operating costs. The cost data should be included in the BACT analysis and documented for the particular source. Appendix D of the Application contains five tables with limited information on the economic impacts for the following units subject to BACT: (1) Heater SCR Systems; (2) Refinery Fuel Gas Desulfurization; (3) Wastewater Treatment Plant; (4) Tank Farm Vapor Recovery System; and (5) Tank Farm Thermal Oxidizer. The tables list only the estimated costs (e.g., costs associated with capitol investments and then the annual costs). There is no mention of where the costs are derived from. Therefore, the costs have not been documented. Generally, cost information is provided from equipment vendors. Other sources of cost data can be found in referenced source documents, for example, EPA's cost manuals. The DENR's and applicant's cost data is inadequate as presented and supplemental application information detailing the documentation for the costs should be provided. The permit application and DENR's analyses should be revised to include this information for EPA and the public's review.

XV. Modeling

The modeled point source emission rates shown in Table 7-124 appear to be based on the annual potential emission rate for each stack (or source) divided by the number of hours in a calendar year. This is appropriate for modeling compliance with annual average NAAQS and PSD increments, however, for demonstrating compliance with short term NAAQS and PSD increments, maximum emission rates consistent with the averaging time of the standard/increment should be used (See tables 8-1 and 8-2 in 40 CFR Part 51, Appendix W). Thus, in modeling PM10 maximum allowable 24 hour average emission rates should be used to demonstrate compliance with the 24 hour NAAQS and PSD Class II increment. Short term emission rates are typically greater than annual average emissions since they may reflect startup and shutdown scenarios as well as periods of peak load/production. Documentation should be provided in a supplemental permit application on how the emission rates used in modeling were derived, and if necessary, additional modeling should be conducted to reflect revised short term emission rates.

Increment consumption from the proposed Big Stone II should be included in the modeling if that facility had a complete PSD application prior to the Hyperion analysis, and the Big Stone facility is within the impact area of Hyperion. Any nearby PSD increment sources that cause a significant concentration gradient in the vicinity of Hyperion should, as discussed above, be modeled at short term emission rates to show compliance with the 3-hour and 24-hour average PSD increments.

XVI. Additional Impact Analysis

A. Soils and Vegetation

The statement that, "based on the fact that land use in the vicinity of the proposed project site is predominantly agricultural, the analysis focused on assessing impacts to agricultural crops grown near the proposed project site", is subjective without supporting information (Hyperion Application Submittal, Appendix F, Soil and Vegetation Impacts Analysis, page 1 and page 158 of DENR's SOB).

40 CFR 52.21(o)(1), adopted by the DENR, states that "the owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value." However, the proposed facility will be approximately 10 miles from the Ponca State Park in Nebraska, and the Oak Grove State Park and Big Sioux County Parks in Iowa, which should be within the envelope of the soil and vegetation analysis. The public utilizes these parks for recreation. Therefore, it is necessary to ensure that the soil and vegetation of the area will be adequately protected from significant deterioration. To achieve this, the analysis should establish soil and vegetation baselines and project whether the Hyperion Energy Center facility could pose a threat of significant deterioration to commercial or recreational value. The missing information and analysis discussed here needs to be included in the record for this proposed PSD permit.

B. Growth

The regulations require that the "owner or operator shall provide an analysis of air quality impact projected for the area as a result of general commercial, residential, industrial and other growth associated with the source or modification." 40 CFR 52.21(o)(2) Appendix G of the permit application contains a growth analysis, which estimates the "additional population that would be expected to take residence in the vicinity of the proposed HEX site, as a direct result of the HEC." Hyperion Application Submittal, Appendix G, page 1. The analysis only includes the residential population estimate, and fails to include the growth associated from commercial, industrial and other growth associated with the proposed source. Furthermore, the analysis only estimates the population growth, it fails to provide an analysis of the air quality impacts projected for the area as a result of this growth. The State's analysis predicts certain emission increases, but it is not clear what these emission estimates are based on (DENR Statement

of Basis, page 158). This missing information should be developed and included in the record for this proposed PSD permit.

XVII. New Source Performance Standards (NSPS)

A. Subpart J and Ja Applicability

EPA received two August 20, 2007, letters from RTP Environmental Associates Inc. (RTP), on behalf of Hyperion Resources, Inc., that were addressed to Michael S. Alushin, Director of EPA's Compliance Assessment and Media Programs Division in Washington, D.C. Among other things, RTP requested an NSPS applicability determination from EPA as to whether Subpart J or Subpart Ja applied to certain units at the facility. EPA is currently evaluating RTP's request, and a response letter to Hyperion from the EPA Region 8 Office of Enforcement, Compliance and Environmental Justice is forthcoming.

If, upon completing its review of RTP's applicability determination request, EPA were to determine that Subpart Ja applies, then the DENR would be required to have the permit applicant re-evaluate and supplement the BACT analysis for units #50 through #64. If Subpart Ja applies, DENR would need to set BACT limits that, at a minimum, meet the requirements of that subpart. 40 CFR 52.21(j)(1).

B. NSPS Permit Conditions

It is unclear in reviewing the NSPS permit Conditions (Chapter 6.0 of the permit) which specific requirements of NSPS subparts apply to which emission units. For example, Condition 6.4 – New Source Performance Standards – Subpart Ja lists Units #1 through # 40, #42a through #42f, and #45a as being subject to this subpart. However, it is unclear if these Units are subject to SO2, NOx, or PM limits under the applicable standard. It is also unclear what methods of compliance determination will be used on each specific unit or what test, if any, is applicable to these Units under this subpart.

EPA recommends that DENR define the standards, compliance methods and testing requirements of each applicable subpart for all of the emission Units.

XVIII. Maximum Achievable Control Technology Standards

A. MACT Permit Conditions

The proposed permit includes permit conditions for several MACT standards. It is unclear whether the proposed permit is a "merged" permit that would include both title V and PSD permit conditions. With the exception of preconstruction requirements

relevant to the case-by-case MACT determination that may be processed administratively in a PSD permit, see 40 C.F.R. 63.43(c)(2)(ii), the PSD permit itself may not include emission limits for hazardous air pollutants, because section 112(b)(6) of the Clean Air Act exempts hazardous air pollutants listed under section 112(b)(1) from the PSD requirements in Part C. We had understood that South Dakota does not have a merged PSD/Title V permit program and therefore, it does not appear that the MACT standards should be included in this PSD permit. However, since it is not clear if this is a "merged" permit, EPA is unable to provide definitive comments on this issue.

In the event that this is a merged permit, EPA offers the following comments. It is unclear from the draft permit which provisions of the NESHAP standard apply to each unit. There are eight NESHAP and MACT subparts that the State has identified are applicable to this source (these include NESHAP Subpart A and FF, and MACT Subparts A, B, H, Q, CC[2], and UUU). Regarding the additional detail needed throughout the permit, we provide the following example. For section 8.6 – Maximum Achievable Control Technology Standard – Subpart UUU states that the owner or operator shall comply with all applicable limitations, work practice standards, testing, monitoring, reporting and recordkeeping requirements. However, the proposed permit neither identifies which units this standard applies to nor does it state what limitations, work practice standards, testing, monitoring, reporting and recordkeeping requirements apply to an individual emission unit.

In the event this is a "merged" permit, EPA recommends that DENR clearly define the applicable limitations, work practice standards, testing, monitoring, reporting, and recordkeeping requirements of each applicable subpart all the emission units. If, however, the permit is not a merged permit, EPA suggests that the DENR take the above comments into account in developing the title V permit.

B. Case-by-Case MACT Determination

The Hyperion Application contains a case-by-case MACT determination for the process heaters, which the Company indicates is necessary "because the NESHAP promulgated for process heaters at subpart DDDDD of 40 CFR part 63 was recently vacated by the D.C. Circuit Court of Appeals." (Application at page 145.) The Company does not indicate whether any other units are subject to this subpart and from the Application EPA can not make a determination. Draft permit condition 8.2 contains some case-by-case MACT limits, which are specified in Table 8-1. (Permit at pages 56-57.) The Statement of Basis also includes a brief discussion of the case-by-case MACT determination. (SOB at pages 40-41.)

EPA agrees that case-by-case-case MACT limits must be established for the process heaters. Under CAA section 112(g), no person may construct or reconstruct any

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[2] EPA has received an applicability determination request from RTP as to whether certain MACT standards, including Subpart CC, apply to the Hyperion facility. EPA is still evaluating RTP's request and hopes to issue a response shortly.

major source of hazardous air pollutants "unless the Administrator (or the State) determines that the MACT emission limitations for the new sources will be met." 42 U.S.C. 7412(g)(2)(B). Section 112(g) provides that such determinations will be made on a case-by-case basis where no applicable emissions limitations have been established by the Administrator. The federal regulations implementing section 112(g) are set out at 40 CFR 63.40-63.44. The section 112(g) regulations set forth in 40 CFR Part 63 identify several review processes that can be used to make section 112(g) case-by-case MACT determinations. See 40 CFR 63.43(c). The other case-by-case MACT provision is section 112(j) of the Clean Air Act. Section 112(j) provides generally that major sources in a category or subcategory for which standards are not promulgated must submit permit applications by given dates, and that federal or state permit writers must then determine on a case-by-case basis an emission limitation equivalent to the limitation that would apply if an emission standard had been issued in a timely manner under section 112(d) or (h) of the Act. See CAA 112(j)(5), 40 CFR 63.55(a). The federal regulations implementing section 112(j) are set out at 40 CFR 63.50-63.56.

We are unable to determine which of the mechanisms under the section 112(g) or 112(j) regulations the State used to establish the case-by-case limit. Therefore, EPA is unable to determine whether all applicable administrative process requirements have been satisfied.

With respect to the limits in the draft permit, we provide EPA's initial comments here. The units identified as process heaters would have been subject to EPA's vacated subpart DDDDD standards for gaseous fuel boilers and process heaters. As such, these units require case-by-case limits. Section 112 of the Clean Air Act requires emissions standards to be established for all HAP listed under section 112(b) which are emitted by a major source. National Lime Assn. v. EPA, 233 F.3d 625 (D.C. Cir. 2000). The draft permit includes only a limit for HCl, and no limit for organic HAP, which are emitted by gaseous fuel process heaters. In the event that there is an existing gas-fired boiler at the facility, we refer you to the part 71 permit recently issued by EPA Region 5 for Veolia Environmental Services. That permit contains a section 112(j) case-by-case MACT limit for an existing gas-fired boiler. EPA continues to review the proposed limits and case-by-case materials and, as necessary, will provide additional comments under separate cover.

XIX. Permit Conditions

A. Condition 10.5

Condition 10.5 should be revised to be consistent with condition 10.1 and the NSPS requirement that the test will not extend the deadline past a federally required performance test deadline (see 40 CFR 60.8(a)).

B. Conditions 10.8, 10.9, 10.10, 10.11, 10.12 and 10.13

These conditions only required that the source perform initial performance tests to demonstrate compliance with the respective limits established in the permit and the units are not monitored by CEMS. DENR should revise these conditions to require periodic monitoring to demonstrating on-going compliance.

C. Conditions 11.1, 11.2 and 11.3

These conditions allow for CEMS downtime to be excluded from the record. This is not consistent with the requirements of NSPS 40 CFR 60.7. DENR should modify these conditions and subject these conditions to the requirements of NSPS CFR 60.7.

XX. Director's Discretion and Related Concerns

The proposed permit has numerous provisions that should be revised (the list of provisions appears below). This type of language is not appropriate for permits as this language is a form of "director's discretion" that would allow the State to unilaterally change permit provisions without benefit of EPA review or public comment. We recommend that the DENR remove these from the permit. An alternative for purposes of this permit for those provisions that relate to test methods would be for the DENR to include a role for EPA approval of alternatives. Additionally, there are several provisions that need additional clarity for enforceability. Here are the problematic provisions that should be revised:

Regarding the granting of permit term extension, the permit indicates that "[t]he Secretary may grant an extension after the owner or operator satisfactorily demonstrates that an extension is justified." (Permit Condition 2.1, the basis for what is "satisfactory" is unclear and should be clarified.)

Regarding the need for recordkeeping provisions related to the startup, shutdown, and malfunction plan, the permit appears to indicate that the requirements in this provision could be revised and the owner or operator no longer would be subject to these provisions. The permit does not indicate how the owner or operator may at some point in the future no longer be subject to this permit condition and we recommend clarification (Permit Condition 3.7).

The permit provision that requires the owner or operator to submit the startup, shutdown, and malfunction plan to the Secretary, appears to require the plan to be approved by the Secretary, however, it is not entirely clear (Permit Condition 4.8, which indicates the plan shall be submitted and approved by the Secretary). The permit condition should be revised to indicate that the Secretary will approve the plan if the permit conditions and other applicable requirements are met.

Similarly, the provisions in Permit Condition 5.9 do not clearly specify that the Secretary approves the operation, maintenance and monitoring plan, and that permit condition should be clarified.

EPA questions how this particular provision of the permit will be implemented and enforced, Condition 5.10 specifies that the "Startup, Shutdown, and Malfunction Plan does not need to address any scenario that would not cause an exceedance of an applicable emission limit."

Condition 5.10 also provides for a form of "source discretion" in allowing the owner or operator to unilaterally use another plan to meet these requirements, without any approval by the DENR. The DENR should maintain review and approval authority over the Startup, Shutdown and Malfunction Plan. The permit condition should be amended accordingly.

The last paragraph of Condition 5.10 presents the various scenarios when revisions to the Startup, Shutdown and Malfunction Plan are necessary. However, the provision fails to identify which entity makes the determination that such revisions are necessary. We recommend that the permit provide clarity on this question.

Permit condition 10.6 requires that performance test reports be submitted within 60 days after completion of the test. The permit condition also allows the Secretary to designate another date and unilaterally change the permit condition, this condition should be removed.

Permit condition 16.2 allows for an alternative method to be approved by the Secretary for control of dust on unpaved roads. This is a form of director's discretion and should be removed, any changes to the BACT requirements must go through public notice and comment.

Permit condition 16.5(4), allows the Secretary to approve an alternative control method for the open storage pile control, this provision should be removed.

XXI. Miscellaneous

112r Requirement

The Region notes that if Hyperion has more than a threshold quantity of a regulated toxic or flammable substance (threshold quantities and regulated substances are listed in 40 CFR Part 68), the facility must submit a Risk Management Plan to EPA and develop a Risk Management Program pursuant to 40 CFR Part 68 prior to the date that the regulated substances listed in 40 CFR Part 68 are present in excess of the listed threshold quantities. As you may know, this would be included as an applicable requirement in any title V permit.

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 10:23 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Hyperion Air Permit

Hyperion comment.

Kim
-----Original Message-----
From: Jennifer Boyle [mailto:jenboyle3@hotmail.com]
Sent: Friday, November 14, 2008 10:20 AM
To: hotmail.com, jenboyle3@hotmail.com; DENR INTERNET INFORMATION
Cc: aol.com, scottboyle1974@aol.com; Connie Reynolds
Subject: Hyperion Air Permit

November 14, 2008

SD DENR
Division of Environmental Services
Joe Foss Building
Pierre, SD

To Whom It May Concern:

Our family has three small children ages 6, 3 and 11 months and live with in 20 miles of the proposed site of the oil refinery. We are writing out of concern for the **health of all of our children**, the **integrity of our community** and the **preservation of our Loess Hills** area as a result of the proposed Hyperion oil refinery.

A Hyperion representative was asked at an Elk Point Country Club meeting, what will be built on the 10,000 plus acres in and near our Loess Hills optioned by Hyperion (with plans of acquiring 32,000 acres). He stated that the proposed plans include an ethanol plant, fertilizer manufacturer, bi-products manufacturer, and possibly several other chemical manufacturers he refused to disclose. We are concerned about the toxicity to our air, soil and groundwater and **Hyperion's refusal to fully disclose ALL of their plans.**

Hyperion is proposing to use the Integrated Gasification Combined Cycle (IGCC) power plant technology. IGCC can release 15-27% higher mercury emissions than other types of newer conventional pulverized coal plants according to the rejected Mesaba IGCC plant in Minnesota. (http://puc.state.mn.us/docs/calendar/cal0806.htm.) A 2006 study by the University of Texas Health Science Center reported that for every 1,000 pounds of mercury emitted in Texas counties, there was a **43% increase in special education and a 61% increase in autism.**

The residents of Nueces and Jefferson Counties, where many industrial facilities are located on the Texas coast, have higher death rates from cancers associated with industrial pollution. Cancer costs the state an estimated $14 billion annually. Texas taxpayers pay 47 percent of the cost for all cancer treatments. **We believe that the increased health care costs to our community for the uninsured/underinsured far out weigh the short term economic and personal gain.** (http://www.refineryreform.org/downloads/industrial_upsets_who_pays_the_price.pdf

President Bush ordered federal agencies to encourage states to build oil refineries on abandoned military bases, not in communities. The Chemical Safety Board's chairperson, Carolyn W. Merritt, who was appointed by President Bush, stated in a New York Times article written in July 2007, the Occupational Safety and Health Administration **DOES NOT** conduct enough inspections (referring to oil refineries). "There is no enforcement," she said. **We believe this is unacceptable.**

It is difficult to TRUST Hyperion when they tout being "green" yet fail to disclose information about the extraction process to get their crude oil from the sands in Alberta, Canada which is "the most destructive project on earth". The water is so polluted at the end of the process that it is simply left to stand in huge tailing pools the cover over 31 square miles. It is so toxic that birds landing on the ponds die. This pool pollutes everything downstream. They have cleared 5,000 hectares already leaving 80 foot high piles of pure sulphur. In ten years they will have cleared a 'toxic moonscape' the size of Florida. Mining sour crude in Alberta produces massive amounts of greenhouse gasses (3-5 times more than drilling). (Akron Hometowner, May 14th, 2008).

Over a years worth of pollution can occur in one day from an "upset" (explosions, fires, leaks) at an oil refinery. That does not need to be reported in their air permit application. Also, the chemicals released during startups for IGCC technology (which is what Hyperion would use and happens 60 times a year) shutdowns and accidents is not part of the application process. **Add this to the application process.** (http://www.psc.state.fl.us/library/filings/07/03205-07/03205-07.pdf)

Since South Dakota has very clean air Hyperion applied for the **lowest** "Best Available Control Technology" (BACT) which could save them millions of dollars, but cause more air pollution. If they were applying in a state with bad air quality they would be required to apply for the best "BACT".

Neither Hyperion nor the SD DENR have assessed odor emissions and impacts from the proposed facility. Petroleum refineries are facilities historically known to cause odor problems and nuisance. South Dakota law defines odors as air pollution and the nature of prohibited nuisance. The application fails to characterize odor emissions and impacts on neighbors of the proposed facility.

We **DEMAND** an environmental impact study. A project of this magnitude, costing this much money ($8-$10 billion), adding possible detrimental health risk, causing environment damage with probable explosions, in the middle of prime farmland located on top of an aquifer and with a large population in a 30 mile radius **HAS TO BE TRANSPARENT AND ACCOUNTABLE**. If Hyperion fails to provide an environmental impact study, disclose ALL their proposed plans and all information pertaining to the project, **they are liable and guilty**.

A public hearing regarding the air permit must be held in our community. Citizens of our community DEMAND to be heard and hold this company responsible for all of their actions.

Thank you for your time and I look forward to your response,
Jennifer Boyle

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 9:34 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Hyperion Draft Air Permit

Scan001.PDF (40 KB)

Hyperion comment.

Kim

-----Original Message-----
From: Quam, Judy [mailto:jquam@QuamBerglin.com]
Sent: Friday, November 14, 2008 9:12 AM
To: DENR INTERNET INFORMATION
Subject: FW: Hyperion Draft Air Permit

-----Original Message-----
From: xerox@quamberglin.com [mailto:xerox@quamberglin.com]
Sent: 11/14/2008 8:10 AM
To: Quam, Judy
Subject: Scan from Xerox WorkCentre

Please open the attached document. It was sent to you using a Xerox WorkCentre.

Sent by: Guest [xerox@quamberglin.com]

DENR
Pierre, SD

November 13, 2008

Re: Proposed Draft Air Permit
Hyperion Energy Center
Union County, SD

Gentlemen:

I am writing to express my concern regarding the draft air permit for the proposed refinery in Union County. I have serious concerns about the potential volume of emissions of various pollutants from this project. I was especially interested to read last week that Hyperion Resources, which has never operated anything even remotely as complex as an oil refinery, and certainly never built one, is objecting to your requirement of technology which might cost them additional millions. Certainly in a project estimated to cost 10 billion dollars, 36 million is immaterial. It's less than ½ of 1% of the total cost!

As someone living two hills away from the proposed refinery site, I am concerned about the odor emitted but I am also concerned about what we won't smell. The projected tons of pollutant emissions from this facility will have an impact on the lives of local residents, but it will also have an impact more far reaching. We all need to be concerned for the environment – even beyond our borders.

We have occasion to pass the Flint Hills Refinery in Rosemount, MN fairly frequently. The refinery must be at least two to three miles from the freeway, and sometimes you smell it, sometimes you don't, but always you see the smokestack emissions and the lights.

I would think that a comprehensive environmental impact statement would be appropriate in a situation such as this and I would urge DENR to require that such a study be completed before any air permit is approved for this project.

I would also suggest that any hearings on this permit be held in the area affected by the project. Many local residents are very interested in being in attendance.

For the past year and a half, I have watched as public officials at all levels in our state, from our local boards to our highest elected official, have prostrated themselves before the altar of "economic development." I hope that officials at DENR are concerned only for public health and safety.

Sincerely,

Judith Quam
P O Box 936
Elk Point, SD 57025

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 3:29 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Attn Hyperion Air Permit

H comment.
-----Original Message-----
From: Redmond, Jim [mailto:Jim.Redmond@briarcliff.edu]
Sent: Friday, November 14, 2008 3:11 PM
To: DENR INTERNET INFORMATION
Cc: Redmond, Jim
Subject: Attn Hyperion Air Permit

South Dakota
Department of Environment and Natural Resources

Given the Department of Environment and Natural Resources lack of response to our July comment on Hyperion's Air Permit Request, we assumed that our concerns would be addressed in the department's recommendation. They were not. See below for the full text of our July comments

The primary problem with the air permit is that it is coming before a complete Environmental Impact Statement has been prepared. An industrial development of this size warrants a full, not a piecemeal, analysis of the regional effects. While Union County air may have higher thresholds for a range of air pollutants, just across the border in Iowa and Nebraska processing plants have created a different atmosphere. Neither Hyperion's permit nor the DENR's recommendation address the Sioux City metropolitan population's increased exposure to pollutants.

Major elements of the industrial project are not addressed, specifically the effects of refining a particularly sour form of crude oil from the Alberta Tar Sands. Equipment maintenance will be much more difficult and the number of malfunctions (and consequent increases in the escape of pollutants) will be higher than in refineries handling sweet crude.

Monitoring is still not current independently verified technology but based on self-reported sampling. Penalties for permit violations should be on a graduated scale. $10,000 per day would not match serious violations.

While the Hyperion air permit application addressed the impact on visibility at the Missouri National Recreational River, it failed to address the threats of industrial air pollution on rare native prairie preserves in Iowa.

Perhaps the greatest oversight in Hyperion's air permit application and in the South Dakota Department of Natural Resources response is its lack of concern for greenhouse gases. This site will double the

emission of these polluting gases for the state of South Dakota. The Supreme Court has recently ruled on carbon dioxide emissions and your agency should be addressing this pollutant. The federal Environmental Protection Agency has recently called for the re apraisal of coal-fired power plants to anayze their CO2 emissions. The Hyperion refinery is centered around a coal-fired power plant in the form of the IGCC.

This application for an air pollution permit should be denied or delayed.

Dr. Jim Redmond, Conservation Chair
Sierra Club's Northwest Iowa Group

712-258-8303 jim.redmond@briarcliff.edu

Mr. Brian Gustafson, Administrator
Air Quality Program
South Dakota Department of Environment and Natural Resources
523 E. Capitol
Pierre, SD 57501

Dear Mr. Gustafson:

The Iowa Chapter of the Sierra Club requests that your Department deny the application by Hyperion Refinery LLC for a PSD air quality permit. The air emissions from the proposed refinery will seriously impact people in Iowa.

Among serious problems described in the PSD application, we are especially concerned about the lack of independent monitoring of air pollution emissions. The application describes no plan for the most up-to-date air monitoring available through "Differential Absorption Light Detection and Ranging" (DIAL). DIAL is a laser-based optical method that can remotely measure the concentration of gases in the atmosphere up to 2 km distant with detection limits in the order of parts per billion. By combining DIAL measured 2D concentration maps with measured wind speed, the mass emissions of the species in a plume can be calculated. Citizens and DENR staff will have to rely on self-reported emissions by the refinery instead of an independent monitoring system that is not based on random samples. Costs for this independent monitoring should be part of the construction and operation costs for Hyperion, not an added burden to taxpayers of South Dakota and surrounding states, including Iowa.

Of great concern is the fact that coal will be used as the fuel for the power plant to run the refinery. Hyperion proposes to employ an experimental process called integrated coal gasification combined cycle (IGCC). Hyperion admits that there will not be sufficient petroleum coke to support the refinery's energy needs. They will import coal or natural gas to supply sufficient power to the refinery. Research shows that IGCC has only operated at an experimental level, not at a commercial level. They are requesting a supplementary electrical generating plant as part of their design. Using IGCC for carbon recovery above 5% (and possible sequestration) creates financial burdens that would jeopardize the financial viability of this proposed operation. This seems to be a case of "bait and switch" as the company lured citizens with promises of a greener refinery when instead they will be relying on traditional energy generation. The financial health of the project is critical for the environmental health of Union County and surrounding counties. We believe that the claims about the carbon capture process are not borne out when the heavy financial costs are factored in.

Also, because the refinery will ultimately be burning coal for its energy, significant greenhouse gases

will be emitted. Based on federal and state law and regulations, your department must set emission limits for greenhouse gases in the air permit as part of the Best Available Control Technology (BACT) analysis. Although current law and regulations do not specifically list greenhouse gases as air pollutants for which emission limits must be set, the requirements of the current law and regulations clearly include greenhouse gases.

The Clean Air Act requires a new major stationary source of air pollutants or a major modification of an existing source to comply with prevention of significant deterioration (PSD) requirements. 42 U.S.C. § 7475(a). Pursuant to these requirements, a PSD permit must include BACT emission limits "for each pollutant subject to regulation under [the Clean Air Act]" for which emissions exceed specified significance levels. 42 U.S.C. §§ 7475(a), 7479. Federal regulations provide that "[a] new major stationary source shall apply best available control technology for each regulated NSR pollutant that it would have the potential to emit in significant amounts." 40 C.F.R. 52.21(j)(2). The federal regulations also provide that "[a] major modification shall apply best available control technology for each regulated NSR pollutant for which it would result in a significant net emissions increase at the source." 40 C.F.R. § 52.21(j)(3).

Therefore, your department must conduct for each pollutant subject to regulation under the Clean Air Act a case specific review of relevant energy, environmental and economic considerations based on detailed information submitted by the applicant. Then, based on the BACT analysis, the permit that is issued must set emission limits for the regulated pollutants. After the decision of the United States Supreme Court in Massachusetts v. EPA, 127 S.Ct. 1438 (2007), it is also clear that greenhouse gases are air pollutants subject to regulation. Therefore, by virtue of the discussion above, a BACT analysis must be performed for greenhouse gases and emission limits established in the Hyperion permit.

Another concern we have is the potential threat to native prairies. While Hyperion addressed the potential threat to agricultural land and crops, it failed to recognize the adverse effects this industrial pollution would have on native prairies in the area. The last and most significant remnants of native prairie in Iowa are near the refinery site. Broken Kettle Grasslands, Five Ridge Prairie, Riverside Bluffs, and Stone State Park are all in jeopardy. Our research reveals that industrial pollution from such point sources has detrimental effects on the biodiversity so essential to the survival of prairie ecosystems. See, Agrawal and Agrawal, Environmental Pollution and Plant Responses (2002).

Based on all of the concerns expressed above, we also believe an environmental impact statement should be prepared for this project. Pursuant to Chapter 34A of South Dakota Codified Laws, your agency has the authority to prepare an EIS to examine the environmental impacts of issuing a permit. The enormity and range of environmental impacts that will result from the construction and operation of the Hyperion refinery certainly justify the preparation of an EIS.

Thank you for your consideration of the points raised in this letter. Please keep us informed of any further developments.

Pam-Mackey Taylor
Chair, Iowa Chapter Sierra Club
319-377-2842
PamMackeyTaylor@aol.com

Dr. Jim Redmond
Chair, Northwest Iowa Group
Sierra Club
712-258-8303.
Sioux City IA 51104

Jim.redmond@briarcliff.edu

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 2:14 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Hyperion air permit

Another Hyperion comment.

Kim
-----Original Message-----
From: Redmond, Jim [mailto:Jim.Redmond@briarcliff.edu]
Sent: Friday, November 14, 2008 12:00 PM
To: Redmond, Jim; DENR INTERNET INFORMATION
Subject: Hyperion air permit

South Dakota
Department of Environment and Natural Resources

Given the Department of Environment and Natural Resources lack of response to our July comment on Hyperion's Air Permit Request, we assumed that our concerns would be addressed in the department's recommendation. They were not. See below for the full text of our July comments

The primary problem with the air permit is that it is coming before a complete Environmental Impact Statement has been prepared. An industrial development of this size warrants a full, not a piecemeal, analysis of the regional effects. While Union County air may have higher thresholds for a range of air pollutants, just across the border in Iowa and Nebraska processing plants have created a different atmosphere. Neither Hyperion's permit nor the DENR's recommendation address the Sioux City metropolitan population's increased exposure to pollutants.

Major elements of the industrial project are not addressed, specifically the effects of refining a particularly sour form of crude oil from the Alberta Tar Sands. Equipment maintenance will be much more difficult and the number of malfunctions (and consequent increases in the escape of pollutants) will be higher than in refineries handling sweet crude.

Monitoring is still not current independently verified technology but based on self-reported sampling.
Penalties for permit violations should be on a graduated scale. $10,000 per day would not match serious violations. Penalties should be a range.

While the Hyperion air permit application addressed the impact on visibility at the Missouri National Recreational River, it failed to address the threats of industrial air pollution on rare native prairie preserves in Iowa.

Perhaps the greatest oversight in Hyperion's air permit application and in the South Dakota Department of Natural Resources response is its lack of concern for greenhouse gases. This site will double the emission of these polluting gases. The Supreme Court has recently ruled on carbon dioxide emissions and your agency should be addressing this pollutant.

This application for an air pollution permit should be denied.

Dr. Jim Redmond, Conservation Chair
Sierra Club's Northwest Iowa Group

712-258-8303 jim.redmond@briarcliff.edu

Mr. Brian Gustafson, Administrator

Air Quality Program
South Dakota Department of Environment and Natural Resources
523 E. Capitol
Pierre, SD 57501

Dear Mr. Gustafson:

The Iowa Chapter of the Sierra Club requests that your Department deny the application by Hyperion Refinery LLC for a PSD air quality permit. The air emissions from the proposed refinery will seriously impact people in Iowa.

Among serious problems described in the PSD application, we are especially concerned about the lack of independent monitoring of air pollution emissions. The application describes no plan for the most up-to-date air monitoring available through "Differential Absorption Light Detection and Ranging" (DIAL). DIAL is a laser-based optical method that can remotely measure the concentration of gases in the atmosphere up to 2 km distant with detection limits in the order of parts per billion. By combining DIAL measured 2D concentration maps with measured wind speed, the mass emissions of the species in a plume can be calculated. Citizens and DENR staff will have to rely on self-reported emissions by the refinery instead of an independent monitoring system that is not based on random samples. Costs for this independent monitoring should be part of the construction and operation costs for Hyperion, not an added burden to taxpayers of South Dakota and surrounding states, including Iowa.

Of great concern is the fact that coal will be used as the fuel for the power plant to run the refinery. Hyperion proposes to employ an experimental process called integrated coal gasification combined cycle (IGCC). Hyperion admits that there will not be sufficient petroleum coke to support the refinery's energy needs. They will import coal or natural gas to supply sufficient power to the refinery. Research shows that IGCC has only operated at an experimental level, not at a commercial level. They are requesting a supplementary electrical generating plant as part of their design. Using IGCC for carbon recovery above 5% (and possible sequestration) creates financial burdens that would jeopardize the financial viability of this proposed operation. This seems to be a case of "bait and switch" as the company lured citizens with promises of a greener refinery when instead they will be relying on traditional energy generation. The financial health of the project is critical for the environmental health of Union County and surrounding counties. We believe that the claims about the carbon capture process are not borne out when the heavy financial costs are factored in.

Also, because the refinery will ultimately be burning coal for its energy, significant greenhouse gases will be emitted. Based on federal and state law and regulations, your department must set emission limits for greenhouse gases in the air permit as part of the Best Available Control Technology (BACT) analysis. Although current law and regulations do not specifically list greenhouse gases as air pollutants for which emission limits must be set, the requirements of the current law and regulations clearly include greenhouse gases.

The Clean Air Act requires a new major stationary source of air pollutants or a major modification of an existing source to comply with prevention of significant deterioration (PSD) requirements. 42 U.S.C. § 7475(a). Pursuant to these requirements, a PSD permit must include BACT emission limits "for each pollutant subject to regulation under [the Clean Air Act]" for which emissions exceed specified significance levels. 42 U.S.C. §§ 7475(a), 7479. Federal regulations provide that "[a] new major stationary source shall apply best available control technology for each regulated NSR pollutant that it would have the potential to emit in significant amounts." 40 C.F.R. 52.21(j)(2). The federal regulations also provide that "[a] major modification shall apply best available control technology for each regulated NSR pollutant for which it would result in a significant net emissions increase at the source." 40 C.F.R. § 52.21(j)(3).

Therefore, your department must conduct for each pollutant subject to regulation under the Clean Air Act a case specific review of relevant energy, environmental and economic considerations based on detailed information submitted by the applicant. Then, based on the BACT analysis, the permit that is issued must set emission limits for the regulated pollutants. After the decision of the United States Supreme Court in Massachusetts v. EPA, 127 S.Ct. 1438 (2007), it is also clear that greenhouse gases are air pollutants subject to regulation. Therefore, by virtue of the discussion above, a BACT analysis must be performed for greenhouse gases and emission limits established in the Hyperion permit.

Another concern we have is the potential threat to native prairies. While Hyperion addressed the potential threat to agricultural land and crops, it failed to recognize the adverse effects this industrial pollution would have on native prairies in the area. The last and most significant remnants of native prairie in Iowa are near the refinery site. Broken Kettle Grasslands, Five Ridge Prairie, Riverside Bluffs, and Stone State Park are all in jeopardy. Our research reveals that industrial pollution from such point sources has detrimental effects on the biodiversity so essential to the survival of prairie ecosystems. See, Agrawal and Agrawal, Environmental Pollution and Plant Responses (2002).

Based on all of the concerns expressed above, we also believe an environmental impact statement should be prepared for this

project. Pursuant to Chapter 34A of South Dakota Codified Laws, your agency has the authority to prepare an EIS to examine the environmental impacts of issuing a permit. The enormity and range of environmental impacts that will result from the construction and operation of the Hyperion refinery certainly justify the preparation of an EIS.

Thank you for your consideration of the points raised in this letter. Please keep us informed of any further developments.

Pam-Mackey Taylor
Chair, Iowa Chapter Sierra Club
319-377-2842
PamMackeyTaylor@aol.com

Dr. Jim Redmond
Chair, Northwest Iowa Group
Sierra Club
712-258-8303.
Sioux City IA 51104
Jim.redmond@briarcliff.edu

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 9:15 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Hyperion Air Permit

CFH Letter 1-13-08.pdf (43 KB.

Hyperion comment.

Kim

-----Original Message-----
From: jtowler3124@aol.com [mailto:jtowler3124@aol.com]
Sent: Friday, November 14, 2008 8:16 AM
To: DENR INTERNET INFORMATION
Subject: Hyperion Air Permit

Attached please find a letter from Citizens for Hyperion in support of the Air Quality Permit.

Thank you for your attention to this matter.

Jim Towler
Chairman
Citizens for Hyperion

November 13, 2008

Brian Gustafson, Administrator
Air Quality Program
Department of Environment and Natural Resources
523 East Capitol, Joe Foss Building
Pierre, South Dakota 57501

Dear Mr. Gustafson:

We write to express Citizens for Hyperion's support for the Hyperion Energy Center permit application. Please accept this letter as our formal comment requesting that the South Dakota DENR approve the Hyperion Energy Center air permit without further delay. The recent 30 day extension of the comment period should provide ample time for all interested parties to properly assess the draft permit. We strongly believe this project is a great opportunity for the people of South Dakota, the Siouxland region and the nation.

We support the Hyperion Energy Center for the following reasons:

- The majority of Union County voters want this facility to be built in Union County, as displayed in the 58%-42% vote in June;
- The economic benefit the state, region, and nation will see from this project is tremendous;
- Thousands of new jobs, new tax revenue and tremendous growth as a result of this project will benefit everyone in the region;
- This project allows South Dakota to take a leadership role in helping America to increase its energy security;
- Hyperion is demonstrating a commitment to good corporate citizenship and community involvement;
- [The extensive State and Federal permitting process required for this project will examine the potential impact the Hyperion Energy Center will have on the environment; and
- Most importantly, Hyperion is committed to meeting or exceeding all environmental standards required by SD DENR.

The majority of people in Union County have spoken and they are ardently in favor of the Hyperion Energy Center. Please do not allow outside environmental groups to come into our state and hinder the permitting process. The enormous economic development that this project creates is needed in our great country now more than ever.

Thank you for your time and diligent attention to this matter.

Sincerely,

James S. Towler, Chairman

Citizens for Hyperion

850 Willow Drive, Dakota Dunes, SD 57049

CC: Board of Minerals and Environment

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 3:05 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Attn: Hyperion Air Permit

H comment.
-----Original Message-----
From: Kim Quam [mailto:kimquam@hotmail.com]
Sent: Friday, November 14, 2008 2:30 PM
To: DENR INTERNET INFORMATION
Subject: Attn: Hyperion Air Permit

To the South Dakota Department of Natural Resources,

I am writing in reguards to Hyperion's Air Permit. My family and I live within a mile of Hyperion's proposed refinery: We live on a farm that has been in my husbands family for generations. When my husband and I finished college we chose to build a home on the land and raise our 2 children there. I am urging you to require that an Environmental Impact Study be done, so that it is clear how the refinery will change our land forever. Right now I don't have to worry about the air my children breathe or the water they drink. I have been around a few refinery's in my life and everyone of them had a noticable odor. Since Hyperion has never built a refinery before and this is the first time South Dakota has delt with one, we deserve to know what changes we have in store for us.

I would also urge you to hold any public permit hearings here in Union County. The effects of this refinery will be felt by many. If the hearings are only held in Pierre many will not be able to attend because of the distance.

Thank you for considering my requests.

Kim Quam
31788-473rd Ave.
Elk Point, SD 57025

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 11:32 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW:

Hyperion comment.

Kim
-----Original Message-----
From: Linda A Lamoreux [mailto:linda.a.lamoreux.i1h0@statefarm.com]
Sent: Friday, November 14, 2008 11:31 AM
To: DENR INTERNET INFORMATION
Subject:

Tomorrow is the deadline for Hyperions air permit and I want one thing. Please take your time before you give Hyperion their permit. You were selected to look out for me, I know this will bring jobs and economic growth but don't compromise our health for economic reasons. South Dakota has good clean air, we decided to live here because of the good clean living.

Please make them have very high standards-for me.

Linda Lamoreux, LSA5
linda.a.lamoreux.i1h0@statefarm.com
Keith Gates State Farm Insurance
1248 River Dr.
PO Box 1637
N. Sioux City, SD 57049
605-232-3089
Fax 605-232-0894

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 3:52 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: ATTENTION: HYPERION AIR PERMIT

denrltr.doc (21 KB)

H comment.

-----Original Message-----
From: Brule Creek Farms [mailto:brulecreekfarms@speednet.com]
Sent: Friday, November 14, 2008 3:41 PM
To: DENR INTERNET INFORMATION
Subject: ATTENTION: HYPERION AIR PERMIT

PLEASE SEE ATTACHED LETTER.

November 11, 2008

Mr. Brian Gustafson, Administrator
Air quality program
Department of Environment and Natural Resources
Division of Environmental Services
523 E. Capitol, Joe Foss Building
Pierre, South Dakota 57501

RE: Hyperion air permit

Dear mr. Gustafson:

Thank you for taking the time to read my concerns over the proposed draft air permit for hyperion.

A major concern to me is that no independent environmental impact statement is being required, even though the sd environmental policy act calls for an eis for a project with such scope and magnitude. To simply say it is not needed is irresponsible and an injustice to our state.

Another concern regarding the air permit, is the fact that hyperion wants to use bact for pollution control – why aren't they being required to use the more stringent laer standards?

Lastly, I would like to request that when the sd denr holds their public hearing concerning the air permit that it be held in the area of the proposed refinery. This would enable the people directly affected to participate and express their concerns.

As a final note, I recall that during the april 24, 2008, sd public broadcasting - focus program, regarding hyperion's oil refinery, governor rounds stated:

"in every decision we make and in every policy we develop, we are committed to protecting those who cannot protect themselves"

I urge you to protect the citizens of sd and deny hyperion's air permit request until all of these concerns can be addressed.

Mary I. Wilson davis
31750 476th avenue
elk point, sd 57025

Rombough, Kyrik

From: Smith, Kim
Sent: Monday, November 17, 2008 7:12 AM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Hyperion air pollution permit

H comment.
-----Original Message-----
From: Dahlhoff, Mark [mailto:Mark.Dahlhoff@usd.edu]
Sent: Friday, November 14, 2008 9:59 PM
To: DENR INTERNET INFORMATION
Subject: Hyperion air pollution permit

To Whom it may Concern:
Just a short note to voice concern for the well-being of my own 5 young kids and other young families. We are very skeptical of the safety of having such a large refinery such as Hyperion less than 10 miles from our home, along with the potential of many more polluting industries in future years. Please use the utmost descretion in allowing this refinery to be built here, since it will certainly change, for the worse, our air and water quality and our overall environment in SE South Dakota and the surrounding states.
I am very concerned for the health and safety of my own children and our future generations.
Is the potential economic gain of the refinery really worth the great risks that it would bring to the health and well-being of our people?
Thanks for all your scrutiny and research on this project.
M. and M. Dahlhoff

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 2:15 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Proposed oil refinery

Hyperion comment.

Kim
-----Original Message-----
From: marguerite shaddy [mailto:mashaddy@hotmail.com]
Sent: Friday, November 14, 2008 12:43 PM
To: DENR INTERNET INFORMATION
Cc: mashaddy@hotmail.com
Subject: Proposed oil refinery

Dear Sir or Madam:

I am writng to express my deep concern about and firm oppostion to the propsed oil refinery in Union County. There are numerous dangers involved in this proposition. To procede with the project would be irresponsible and hazardous to the people, land and water not only of Union County, but several counties in South Dakota and neighboring states.

First, it is hard to believe that an environmental impact study has not been done. How can anyone excuse this? This must be done, and if it is not, this will be the first and greatest liability on the part of the state.

Hyperion nor the DENR has assessed the odor emissions and impacts from the proposed facility. South Dakota law defines odors as air pollution and a prohibited nuisance. There are a host of other things that Hyperion is failing to addressuch as:

-flaring (upstarts/shutdowns) not included in emissions of plant
-not requiring BACT or DIAL
-no transportation issues addressed, such as where will rail be, truck traffic and how that will contribute to emissions
-no monitoring on greenhouse gases

When the South Dakota DENR holds their public hearing concerning the air permit, it should be held in the area of the propsed refinery rather than in Pierre so that concerned citizens will have a chance to participate.

I appreciate your service to the county and hope that you have the integrity to act in a responsible way to its citizens and land.

Sincerely,

Marguerite Shaddy

Rombough, Kyrik

From: Murray, Vicki
Sent: Friday, November 14, 2008 4:45 PM
To: Rombough, Kyrik
Subject: FW: DENR/Hyperion/please forward

one more.

-----Original Message-----
From: Mary S. [mailto:slatterymt@hotmail.com]
Sent: Friday, November 14, 2008 3:58 PM
To: Murray, Vicki
Subject: DENR/Hyperion/please forward

health issues

From: slatterymt@hotmail.com
To: slatterymt@hotmail.com
Subject: sioux city journal
Date: Fri, 14 Nov 2008 15:55:47 -0600

Editor of Sioux City Journal May 16, 2008

As a retired cardiologist I am not qualified to comment on the health effects of a refinery. However research on the marked increased incidence of childhood asthma and decreased lung volume in children living close to a refinery is solid. The increased incidence of leukemia and lymphoma is best documented in the workers but a great deal of ancedotal information suggests those living close to refineries are affected as well. Low birth weights and other cancers and neurological diseases remain under investigation. The rotten egg smell near a refinery relates to an increased incidence of 'psychosomatic" complaints. Upper respiratory symptoms are correlated with this smell.

The Missouri River aquifer is 50 feet beneath Hyperion's land. Toxins make their way into the ground water from the polluted air with higher concentrations of toxins developing in rain and snow. At least one model suggests a 50 mile radius for air pollution from the refinery site. USGS circular 1292 outlines some of the effects of VOCs in ground water: health effects listed include liver abnormalities, thyroid and testicular cancer, and birth defects.

Woodbury and Union County may need to address their environmental health resources.

Mary Slattery MD FACC, FACP, FACCP
1966 Graduate of EPHS

Rombough, Kyrik

From: Murray, Vicki
Sent: Friday, November 14, 2008 4:45 PM
To: Rombough, Kyrik
Subject: FW: DENR/hyperion please forward

I brought down a hard copy also.

-----Original Message-----
From: Mary S. [mailto:slatterymt@hotmail.com]
Sent: Friday, November 14, 2008 3:55 PM
To: Murray, Vicki
Subject: FW: DENR/hyperion please forward

From: slatterymt@hotmail.com
To: slatterymt@hotmail.com
Subject: DENR
Date: Fri, 14 Nov 2008 15:47:57 -0600

Dear DENR:

14, 2008

Why would a pristine rural area, surrounded by SD's breadbasket, sitting on top of the furthest west river aquaphor in this continent be chosen as a site for a preindustrial industry known to always contaminate the ground water and air? The governor's office and his "environmental attorney" misled the people of Union County into believing that this was a "green" project. People sold land options based on the governor's word. "Green" implies CO2 sequestration in this industry which is not an option in the Missouri River basin, further no studies were done on the shale formation beneath the rich Union County land. Will the DENR clarify Mr. Round's use of the word "green"? Initially Hyperion planned to pull millions of gallons of water from the surface Missouri in the last federally protected stretch of native land along the surface river. They tried to change the zoning regulation in Union County 4 years before this project was made public. But no interest in the surface or ground water issues until they had been able to convince the misinformed folks around Dakota Dunes/Jefferson that the stench of rotten egg would not reach 20 or so miles down wind. Their approach has been political, not in scientific good faith. The true endangered species: prosperous environmentally healthy rural communities, economically diverse, enjoying a standard of living reserved for the wealthy in most of the country. Elk Point has been a historic rural area that tied the past to the present, an area that still reflects the natural beauty that Lewis and Clark wrote about. Why isn't our way of life worth preserving? Given the impact of global warming, unprecedented in history, the critical need for clean water from the Missouri cannot be based on past experience. The value of clean water cannot be based on historical experience. Mathematical models based on historical data cannot be trusted in this age of rapidly changing global atmosphere. The standards for water "repurification" have to be reset because of the volume of water (millions of gallons per day) and duration (many decades, multiply generations) and synergistic ramifications on precipitation-

progressively concentrating known carcinogens/toxins-is tantamount to assault on our an entire ecosystem. You cannot separate out each segment, which I would argue you cannot accurately measure or predict even each segments destructive effect, and predict what amounts to a war not on just the environment in which we live but to our way of life. I apologize that this has fallen to a small handful of scientists but it appears that is the case.

No other state in the country will allow the building of a new refinery. (Please consider an EIS prior to any permit.)
The usual toll on the environment and population is particularly burdensome to the rural population of eastern SD and creates unique problems that need to be addressed.

1. The bonding laws of SD do not provide for a project of this magnitude-what is the price tag for contaminating the Missouri River aquiphor thirty years from now? How will that change as people run out of clean water?
2. Shouldn't the state require that the corporation that pursues a permit from have a reasonable expectation being able to execute the project? How can a company that cannot build something let alone establish reasonable long term bonding be considered to be pursuing a permit in good faith? Isn't the state setting the permit process up as a "security" to be sold as a commodity? Was that the intent of the legislature when they established the permit process? Or is this a corporate shell to distance liability? Either way the state should not be participating in such a ruse. Hyperion will not even admit who they are, they remain shrouded in secrecy. Eminent domain issues required Secretary of State to permit pipelines into this country from Canada. How can you grant a permit to anyone not knowing who owns them?
3. All refineries in place have contaminated the ground water, the Missouri River aquiphor is 50 feet below the ground. This contamination occurs without "accidents"; and they all have accidents. How do you intend to compensate farmland and occupants adjoining this project? Unless you intend to unfairly limit their liability, shouldn't Hyperion own land for a ten miles radius from this highly industrial/toxic project. Or do you assume they will be an adequate public nuisance to force those in the surrounding area to sell to them? Isn't the state participating in this "annexation by nuisance"? The governor's collusion with them mitigated land costs (by publicly calling this a "green" project); the state's role becomes clouded. (In this series, Rounds admits that he kept a secret to prevent competitors from taking over the land. In other words, Rounds kept it a secret so that Hyperion can get lower prices on the land in the area. He never explains exactly why it's in anybodies interest (other than Hyperion's) to not wait and sees who the highest bidder for the land might be.)
4. Studies are showing that calcium and manganese are stripped out of the soil and does not return even after ph is corrected from refineries. How can you offer a permit without accurate models that reflect each type of soil; the description of each parcel of land demonstrates the wide variety of soil types throughout this region; couple that with the changes in ph that will be accelerated with global warming? I cannot image that your models allow for all the variables in an instable atmosphere. Please include this in an EIS.
5. The air contamination will bathe not only the lungs of eastern SD but the crops. What studies have been done specific to corn, beans, soy to show the amount of VOC's occur in the produce in a futile region planted in the middle of the wind corridor? Will this amount continue to increase over the years as the soil becomes progressively more contaminated? Can anyone within 50 miles of this project grow 'organic" produce; will landowners be compensated for removing this potential source of income? Models on the west coast where people are buying food directly from farms in areas where they know they can control what contaminants are present. This is becoming an increasing lucrative aspect of farming as Americans in general are concerned about their food

source. How do you plan to compensate farmers for the contamination of their crops? Has precipitation contamination which progresses, i.e. each year more is dumped on the soil been done for this specific area with our specific crops?

6. How will global warming effect the toxicity of the sulfuric acid/methane and toluene on crops, i.e. do you actually have models in place that take into account the latest environmental changes and their rapid acceleration? Yesterdays NYT article referenced large brown clouds over Asia: http://www.nytimes.com/2008/11/14/world/14cloud.html?partner=permalink&exprod=permalink
7. As a rural area without the environmental health, roads, fire, or legal infrastructure to handle this project are you going to require some type of funding be in place to offset these costs? How will you compensate the county? What about the safety of young women attending USD in Vermillion while close to ten thousand migrant workers camp between Vermillion and Elk Point? EP has one policeman! Their parents need to know the name of the those you permit to hide behind a corporate vale. This is an attack on an entire way of life, directly by ignoring serious infrastructure and indirectly by slowing poisoning our crops and livestocks.
8. Do you have any studies on the effect of 24 hour noise has on livestock? What about 24 hours of bright lights on crops/livestock? Please do an environmental impact statement specifically addressing livestock and pheasants.
9. What is the environmental impact on pheasants? Polluting some of their habitat, causing accumulation of toxins in their fat cells? To what extend will the pollutants known to occur in birds exposed to such industrial contaminants be passed generation to generation. To what extent will humans who eat such fowl be exposed to such toxins? How will that be perceived by the hunting public?
10. What about tourism-come to SD and smell sulfuric acid? Tour the refinery?

At least one projection is that the tar sands will be out of water by 2025. Then what? Canadians will not permit this to be built there. I am also sending a copy of a letter I sent to the paper about health issues.

Mary Slattery

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 3:07 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: ATTN: Hyperion Air Permit

H comment.
-----Original Message-----
From: Sue Patton [mailto:spatton@plainsjustice.org]
Sent: Friday, November 14, 2008 2:55 PM
To: DENR INTERNET INFORMATION
Subject: ATTN: Hyperion Air Permit

www.plainsjustice.org

November 14, 2008

Brian Gustafson, Administrator
Air Quality Program
Department of Environment and Natural Resources
523 East Capitol, Joe Foss Building
Pierre, South Dakota 57501

Re: Comments on the Draft Prevention of Significant Deterioration Air Quality Preconstruction Permit for the Hyperion Energy Center

Plains Justice, a public interest law group that works to protect Northern Plains communities from offices in Cedar Rapids, Iowa and Vermillion, South Dakota, respectfully submits these comments on the Department of Environment and Natural Resources' (DENR) proposed issuance of a permit for the construction of a petroleum refinery and integrated gasification combined cycle (IGCC) power plant at a greenfield site in southeastern South Dakota. The Hyperion Energy Center (HEC) would be one of the largest refineries and electric generating units in the United States. Due to the proximity to the Iowa border, the HEC will subject Iowa residents to excessive air pollutants. The pollutants emitted from a facility like the HEC have significant public health impacts that transcend state borders. These comments are intended to summarize Iowans' most serious concerns about the construction of this facility so close to the Iowa-South Dakota border. Iowans risk public health and air quality impacts from the proposed facility, and economic development on the Iowa side of the border may also suffer unjustly due to the large consumption of NAAQS increment by a single South Dakota facility.

I. Introduction

The Clean Air Act (CAA) was created "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare."[1] Section 109 of the CAA requires the Environmental Protection Agency (EPA) to establish "national ambient air quality standards"

[1] 42 U.S.C. § 7401(b)(1).

Cedar Rapids Office:
100 First Street SW, Suite 201
Cedar Rapids, IA 52404
Phone: (319) 362-2120
Fax: (866) 484-2373

Vermillion Office:
P.O. Box 251
Vermillion, SD 57069
Phone: (605) 659-0298
Alt Phone: (612) 462-3053

(NAAQS) to protect human health and the environment for seven "criteria pollutants."[2] NAAQS have been established for all seven pollutants: sulfur dioxide, nitrogen oxides, volatile organic compounds, particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$), particulate matter less than 10 micrometers in diameter (PM_{10}), carbon monoxide, and lead.[3] Under Section 107(d), each State is required to designate areas within its borders where the air quality meets and does not meet the NAAQS set for each criteria pollutant.[4] An area that meets the NAAQS for a pollutant is said to be in "attainment;" areas that do not meet the NAAQS are in "nonattainment."

The Prevention of Significant Deterioration (PSD) Program sets out the requirements to protect air quality in attainment areas.[5] Section 165(a) prohibits the construction and operation of a "major emitting facility" without first obtaining a construction permit that contains emission limitations for air pollutants subject to the CAA.[6] Additionally, the owner/operator of a facility must demonstrate that the construction or operation:

> [w]ill not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, (B) national ambient air quality standard in any air quality control region, or (C) any other applicable emission standard or standard of performance under this Act.[7]

Major emitting facilities must also apply "best available control technology" (BACT) emission limitations for each pollutant subject to the CAA.[8]

As HEC is proposed near the Iowa-South Dakota border, air pollutants emitted from this facility will affect Iowa's air quality. Due to the short timeframe and given the very technical and specialized nature of the proposed facility, these comments address just a few concerns Plains Justice has with the Draft PSD permit.

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[2] 42 U.S.C. § 7409.
[3] 40 C.F.R. Pt. 50.
[4] 42 U.S.C. § 7407(d).
[5] 42 U.S.C. §§ 7470-7490.
[6] 42 U.S.C. § 7475(a).
[7] 42 U.S.C. § 7475(a)(3).
[8] 42 U.S.C. § 7475(a)(4).

II. The $PM_{2.5}$ air monitor in Sioux City, Iowa has already registered exceedances of the $PM_{2.5}$ NAAQS

$PM_{2.5}$ is the smallest fraction of particulate matter and a severe public health risk.[9] As seen in Table 1, the air monitor in Sioux City has exceeded the $PM_{2.5}$ NAAQS value of 35 $\mu g/m^3$. While air modeling shows that $PM_{2.5}$ emissions from HEC will not violate the NAAQS, any additional $PM_{2.5}$ in the region will exacerbate the exceedances of the 24-hour NAAQS recorded at the Sioux City monitor in 2007 and 2008.

Table 1. Ambient $PM_{2.5}$ concentrations ($\mu g/m^3$) at Sioux City, Iowa

Year	24-hr 1st Max ($\mu g/m^3$)	24-hr 2nd Max ($\mu g/m^3$)	24-hr 98th Pct ($\mu g/m^3$)	Annual Average ($\mu g/m^3$)
2008	37.6	27.8	27.8	10.47
2007	45.7	36.7	31.2	10.64

Source: EPA AirData, *available at* www.epa.gov/air/data/monvals.html?st~IA~Iowa

Moreover, condensable particulate matter emissions and the secondary formation of $PM_{2.5}$ from chemical conversions have been omitted from Hyperion and DENR's modeling. The omission of these two "sources" of $PM_{2.5}$ can cause a drastic underestimation of $PM_{2.5}$ impacts, leaving the actual $PM_{2.5}$ emissions from the HEC completely unknown. DENR should include these metrics in its modeling.

III. The Draft PSD permit lacks a BACT analysis and emission limitation for $PM_{2.5}$

The PSD Program requires a BACT analysis for $PM_{2.5}$ emissions. As stated above, BACT limits are required for each pollutant *subject to regulation* under the CAA. This includes $PM_{2.5}$, as EPA's promulgation of a $PM_{2.5}$ NAAQS in July 1997 triggered the duty to apply the PSD requirements for this pollutant. Without a BACT limit for $PM_{2.5}$, DENR cannot be certain that the $PM_{2.5}$ NAAQS will not be violated. Further, to issue a PSD permit without a BACT emission limit for $PM_{2.5}$ threatens the public health of not only Iowans, but also South Dakotans.

Without consideration of $PM_{2.5}$ precursors like ammonia, which will be emitted in large quantities, the impact of $PM_{2.5}$ is disturbingly underestimated. The same is true of condensable particulates, a subcategory of $PM_{2.5}$.[10] Condensable particulates comprise a much larger fraction of $PM_{2.5}$ than of larger particulate matter.[11] Without the necessary analysis and application of

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[9] *See* EPA, "$PM_{2.5}$ NAAQS Implementation," *available at* http://www.epa.gov/tnn/naaqs/pm/pm25_index.html.
[10] $PM_{2.5}$ is generally subdivided into filterable $PM_{2.5}$, which can be collected on filter paper, and condensable $PM_{2.5}$, which condenses out of the gas phase.
[11] Proposed Rule To Implement the Fine Particle National Ambient Air Quality Standards, 70 Fed. Reg. 65,984, 66,044 (Nov. 1, 2005).

control technologies, $PM_{2.5}$ emissions will be wholly unchecked, resulting in severe air quality and public health impacts on both sides of the border.

IV. Hyperion's air quality models are deficient

The air quality impacts modeling done by Hyperion has several flaws. First, the radius was limited to 12 km. DENR's modeling covered an even smaller area. The AERMOD model, used by Hyperion, has a maximum radius of 50 km. Analyzing the additional area allows the air impacts in Iowa to be considered. As the project is located near the Iowa-South Dakota border and will have serious impacts on Iowa residents and businesses, it is necessary to include Iowa receptors in the modeling domain. Hyperion restricted its modeling domain to South Dakota receptors only. Without including Iowa receptors, the modeling results give an inaccurate portrayal of the air quality in the region. Moreover, without including emissions from the flares in the modeling analysis, it is impossible to achieve an accurate model.

V. The refinery flares have not been properly analyzed

Numerous chemicals are emitted from refinery flares, including hydrocarbon gases, particulate matter, polycyclic aromatic hydrocarbons, sulfur oxides, carbon dioxide, carbon monoxide, nitrogen oxides, dioxins, and various heavy metals, including mercury and lead. These chemicals all have known health impacts, and must be limited with emission limitations in the HEC PSD permit.

a. The Draft PSD permit does not contain a BACT analysis or emission limitations for the air pollutants emitted from the refinery flares

The CAA requires BACT analyses for the air pollutants emitted from the HEC's refinery flares. Without BACT limits for these pollutants, some of which are criteria pollutants and required to have a BACT limit, the HEC will emit tons of these toxic pollutants in violation of the CAA.

The requirement for flare management plans, Conditions 12.3 and 13.3 of the Draft PSD permit, does not satisfy the requirements of BACT. The management plans are to be created at a later date and do not allow for public comment or input. Even more disturbing is the fact that Hyperion can change the management plans at will, without DENR's input. The management plans do not meet the BACT requirements and are not incorporated into the actual permit. Any kind of emission control or emission limit that may be listed in the Management Plan will not be federally enforceable. This too is a violation of the CAA. When a facility's annual emission limits can be exceeded in a single flaring event, it is necessary to have federally enforceable emission limitations written into the HEC PSD permit.

b. The air quality modeling is inaccurate when it comes to modeling the impact of pollutants emitted from the refinery flares

Hyperion's analysis of the refinery flares lacks a basic characterization of the emissions to be expected during flare-up events. Without information on the air pollutants being emitted or the quantity of these pollutants, air quality modeling cannot accurately predict the impact of sulfur dioxide, PM_{10}, and $PM_{2.5}$ in the region. Because of the failure to account for pollutants emitted from the refinery flares, Hyperion's air quality modeling underestimates the effect HEC will have on regional air quality. This omission renders Hyperion and DENR's air modeling completely inaccurate. Without accounting for this significant source of air pollution, DENR can have no certainty that NAAQS violations will not result.

c. The Draft PSD permit does not consider the effects of start up, shutdown, and malfunction events

Start up, shutdown, and malfunction (SSM) events are considered a part of normal operation for a facility such as HEC. However, neither Hyperion nor DENR accounted for SSM events when establishing BACT emissions limits for all pollution sources. Nor did Hyperion or DENR consider SSM events when analyzing refinery flares. It is well known that a single SSM event can cause flares to exceed a facility's annual emission limits. Without any consideration of SSM, the emission limits in the Draft PSD permit are not actually BACT.

VI. The Draft PSD permit lacks a BACT analysis for the emission of carbon dioxide

As a "major stationary source" of air pollution, the HEC must have a BACT analysis of all its carbon dioxide (CO_2) emissions. The HEC is estimated to emit over 19 million tons per year of CO_2. In 2007, the Supreme Court ruled that CO_2 is an "air pollutant" under the CAA.[12] Moreover, just yesterday, EPA's Environmental Appeals Board held that EPA has no valid reason for refusing to limit CO_2 emissions.[13] Therefore, DENR must require Hyperion to have a BACT analysis for the HEC's CO_2 emissions.

VII. Conclusion

For the foregoing reasons, Plains Justice respectfully requests that the Prevention of Significant Deterioration Air Quality Preconstruction Permit for the Hyperion Energy Center be denied at this time so that the recommended additional analyses can be performed.

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[12] *See Massachusetts v. EPA, A,* 127 S. Ct. 1438, 1443 (2007) ("greenhouse gases . . . fit well within the Clean Air Act's capacious definition of 'air pollutant.'").

[13] *See In Re Desert Power Electric Cooperative*, PSD Appeal No. 07-03 (E.A.B. Nov. 13, 2008).

Thank you for your consideration of these comments.

Respectfully submitted,

Nicole Shalla

Nicole Shalla
Staff Attorney

Rombough, Kyrik

From: Smith, Kim
Sent: Friday, November 14, 2008 2:27 PM
To: Gustafson, Brian; Rombough, Kyrik
Cc: Duvall, Ron
Subject: FW: Attention: Hyperion Air Permit

Hyperion comment.

Kim
-----Original Message-----
From: ScottBoyle1974@aol.com [mailto:ScottBoyle1974@aol.com]
Sent: Friday, November 14, 2008 2:09 PM
To: DENR INTERNET INFORMATION
Subject: Attention: Hyperion Air Permit

November 14, 2008

SD DENR
Division of Environmental Services
Joe Foss Building
Pierre, SD

To Whom It May Concern:

Our family has three small children ages 6, 3 and 11 months and we live within 20 miles of the proposed site of the oil refinery. We are writing out of concern for the **health of all of our children**, the **integrity of our community** and the **preservation of our Loess Hills** area as a result of the proposed Hyperion oil refinery. An environmental impact study has not been completed, and it's imperative that this happen so we all know exactly what we are dealing with, breathing in, and ingesting into our bodies.

A Hyperion representative was asked at an Elk Point Country Club meeting, what will be built on the 10,000 plus acres in and near our Loess Hills optioned by Hyperion (with plans of acquiring 32,000 acres). He stated that the proposed plans include an ethanol plant, fertilizer manufacturer, bi-products manufacturer, and possibly several other chemical manufacturers he refused to disclose. We are concerned about the toxicity to our air, soil and groundwater and **Hyperion's refusal to fully disclose ALL of their plans.**

Hyperion is proposing to use the Integrated Gasification Combined Cycle (IGCC) power plant technology. IGCC can release 15-27% higher mercury emissions than other types of newer conventional pulverized coal plants according to the rejected Mesaba IGCC plant in Minnesota. (http://puc.state.mn.us/docs/calendar/cal0806.htm.) A 2006 study by the University of Texas Health Science Center reported that for every 1,000 pounds of mercury emitted in Texas counties, there was a **43% increase in special education and a 61% increase in autism.**

The residents of Nueces and Jefferson Counties, where many industrial facilities are located on the Texas coast, have higher death rates from cancers associated with industrial pollution. Cancer costs the state an estimated $14 billion annually. Texas taxpayers pay 47 percent of the cost for all cancer treatments. **We believe that the increased health care costs to our community for the uninsured/underinsured far out weigh the short term economic and personal gain.**
(http://www.refineryreform.org/downloads/industrial_upsets_who_pays_the_price.pdf

President Bush ordered federal agencies to encourage states to build oil refineries on abandoned military bases, not in communities. The Chemical Safety Board's chairperson, Carolyn W. Merritt, who was appointed by President Bush, stated in a New York Times article written in July 2007, the Occupational Safety and Health Administration **DOES NOT** conduct enough inspections (referring to oil refineries). "There is no enforcement," she said. **We believe this is**

unacceptable.

It is difficult to TRUST Hyperion when they tout being "green" yet fail to disclose information about the extraction process to get their crude oil from the sands in Alberta, Canada which is "the most destructive project on earth". The water is so polluted at the end of the process that it is simply left to stand in huge tailing pools the cover over 31 square miles. It is so toxic that birds landing on the ponds die. This pool pollutes everything downstream. They have cleared 5,000 hectares already leaving 80 foot high piles of pure sulphur. In ten years they will have cleared a 'toxic moonscape' the size of Florida. Mining sour crude in Alberta produces massive amounts of greenhouse gasses (3-5 times more than drilling). (Akron Hometowner, May 14th, 2008).

Over a years worth of pollution can occur in one day from an "upset" (explosions, fires, leaks) at an oil refinery. That does not need to be reported in their air permit application. Also, the chemicals released during startups for IGCC technology (which is what Hyperion would use and happens 60 times a year) shutdowns and accidents is not part of the application process. **Add this to the application process.** (http://www.psc.state.fl.us/library/filings/07/03205-07/03205-07.pdf)

Since South Dakota has very clean air Hyperion applied for the **lowest** "Best Available Control Technology" (BACT) which could save them millions of dollars, but cause more air pollution. If they were applying in a state with bad air quality they would be required to apply for the best "BACT".

Neither Hyperion nor the SD DENR have assessed odor emissions and impacts from the proposed facility. Petroleum refineries are facilities historically known to cause odor problems and nuisance. South Dakota law defines odors as air pollution and the nature of prohibited nuisance. The application fails to characterize odor emissions and impacts on neighbors of the proposed facility.

We **DEMAND** an environmental impact study. A project of this magnitude, costing this much money ($8-$10 billion), adding possible detrimental health risk, causing environment damage with probable explosions, in the middle of prime farmland located on top of an aquifer and with a large population in a 30 mile radius **HAS TO BE TRANSPARENT AND ACCOUNTABLE**. If Hyperion fails to provide an environmental impact study, disclose ALL their proposed plans and all information pertaining to the project, **they are liable and guilty**.

A public hearing regarding the air permit must be held in our community. Citizens of our community DEMAND to be heard and hold this company responsible for all of their actions.

Thank you for your time and I look forward to your response,
Scott Boyle
